ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

Vol. XLIV OAK PARK, ILL., OCTOBER, 1923 No. 4

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

Subscription price of this Journal to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $3.50 per year for all foreign countries included in the postal union. Canada, $3.25. Single current copies, 35 cents. Back numbers, after three months from date of publication, 50 cents.

Editorial

CENTRALIZATION AT POLITICAL HEADQUARTERS OF MEDICAL CONTROL

With the predatory methods of big business the practice of medicine will be forced to contend as soon as there is a federal bureau, or "Home Office" at Washington, D. C., a "General Office," at the state capital, and a "Branch Office" at the county seat, supplemented by a "General Agency" in the wards of cities and scattered through the smaller towns and hamlets.

When it is as nerve-racking as it is nowadays to get a passport out of Washington or to have your congressman clean up the mail congestion, mother will have a hard time with her labor-pains; baby will have a good chance for opthalmia neonatorum and Johnny a warm prospect of getting over his diphtheria with medicine duly centralized. Of course, in these days the patient will not be allowed to choose his own doctor. Anybody the City Hall or the Ward Boss wishes to send out, the patient will have to take *or* die, or take *and* die, as fate and the juggle may decree. Successful doctors, like successful teachers, have cured though application of the personal element as an aid to therapeutic administration as well as to surgical efficiency. Legislation cannot destroy the personal antagonism between individuals. Russia has tried this recently, and it had been attempted before. With a plurality of powers retroverted to the state, the state becomes a monarchy.

Such retroversion inclines one to regard the "State as a curiosity and so assure the frame of mind of the anarchist who roared, 'the state?' Say, what the hell is the State?" Just at present highbrow performers think they are. So do subsidized parasites of "big business," and "Swollen fortunes," gluttonous robbers of the great middle class wearing the badge of honesty and carrying the side-door key to the counting rooms of the great and the near-great. Half the socialism in

the world is fed on scraps from the kitchens of those whom Socialism professes to hate; scraps that are begged and fawned for, and chewed with relish. And the other half of the Socialism in the world is starving to death.

The force of this will be realized when the Sheppard-Towner bill gets the health of the country under federal control. By that time there will be nothing worth fighting for.

After all, we are not ready to change the basis of our government from that of a union of sovereign states, each with its own fiscal system and independent political subdivision, to that of a much more dominant national government, with the states and their subdivisions as departments, subject to a highly centralized national control over state and local finances and to a large degree over state and local administration. In other words, are we willing to change our present democratic form of government to a bureaucracy or an autocracy? We are not prepared to plunge our national and local governments into a tangle of intertwined financial arrangement in which Uncle Sam will deal out to state and local government more and more funds to be disbursed by them not wholly without check against extravagance and inefficiency, and practically without responsibility, but actually in such manner as to encourage and stimulate local waste and unnecessary expenditures.

Beware of paternal legislation. The Sheppard-Towner and Smith-Towner trouble makers are examples of what is meant. This point is made because of the growing agitation for immediate extension into various fields of governmental activities (established and proposed) of a phenomenon of public finance popularly known as "Federal Aid."

Consideration of this subject is timely because of the measures put before the United States Congress and known as the Sheppard-Towner Maternity Bill, and the Smith-Towner or National Department of Education Bill and types of these measures in which granting of millions in new aids from the Federal treasury to the State government, is the main feature. These two paternalistic bills alone will practically double all the existing grants which now aggregate over a hundred and thirteen million dollars annually. These measures are pushed upon the people by their respective groups of enthusiastic proponents. They are only samples of a large group.

By the term Federal Aid, we understand an appropriation by Congress from the federal treasury of funds to be disbursed to the states, or to local institutions within the states generally through the agency of the state government, and to be used for the local conduct of some designated public activity. The chief condition attached to these state aid appropriations is that the state either alone or with its local governments shall expend for the specific function involved, at least as much money as it is to receive from the national government.

In actual practice this fifty-fifty plan has worked out very unsatisfactorily for the reason that federal supervision has invariably attempted to displace State supervision. As a matter of fact, every dollar appropriated by the government has carried with it the local control not only of the dollar appropriated by the government, but also of the dollar appropriated by the State. In other words, it tends to build up a bureaucracy in this country, and bureaucracy is the curse of every government that has allowed it to develop.

Initial appropriations or the fund to start one of these subsidies are simply the camel's head under the tent, for increasing appropriations each year. As an instance of the possibilities for growth in the field for federal subsidies to local government we cite the following by the honorable E. W. Ball, as Acting Secretary of Agriculture, showing the total federal fund available for co-operative agricultural extension work within the states to have grown since the taking effect of the Smith-Lever law in 1914 from $2,111,350 to $10,569,401 for the fiscal year 1920 and 1921.

The Sterling-Towner Bill to establish a department of education was planned to carry distributive funds of $7,500,000 for education of illiterices over 14 years of age; $7,500,000 for Americanization work; $50,000,000 for general education; $20,000,000 for physical education and $15,000,000 for training of teachers; $500,000 for departmental expenses. The Sheppard-Towner Maternity was planned to carry as a beginning distributive funds $1,480,000 ($4,800,000 was originally proposed), of which $30,000 might be diverted for administration of the law by the Children's Bureau.

In recent years the main idea of the uplifters who proposed these paternalistic schemes is best expressed in the phrase "get the money." The character of the subjects and objects of such sub-

sidizing legislation has been a matter of secondary consideration. Uplifters in recent years have sown broadcast the propaganda of trying to cure all the ills of life both real and imaginary, by creating new bureaus in the department of National government in order to card-index the American people.

This dream-book form of government has increased taxes enormously. Today every theorist with a dream-book scheme wants a law passed to finance his or her own pet project, regardless of the mounting cost of governmental administration. To disabuse the mind of the taxpayer, the theorists begin casting about for that pot of gold at the end of the rainbow labelled "new sources of revenue," about which all public servants soon learn and which apparently they believe has been located at Washington.

What is to become of the taxpayer if paternalistic schemes continue to multiply and are enacted into law? He will be between the upper millstone of state taxes, and the nether millstone of local taxes, while a new creation—federal taxes for local purposes perches and gnaws at his vitals like a vulture. The two great agencies of our Republic, the National and the State, contributing two-thirds of the revenue locally expended, will have no control, no direction, no voice even over their own expenditures or in the local administration which they aid. Then what possible influence could they yield against extravagance? In no place of human endeavor can extravagance politically available be more dangerous than in the care of the public health.

There is another group of advocates of federal aid who do not object to federal supervision (so long as the financing pertains to the things they want done). This group would not object even to a degree of supervision revolting to Americans generally. Members of this group are the ones urging new projects, rather than seeking federal financing for well-established local function. The point of view is different, but the objections to federal aid in the latter instance are not less serious than in the former. Broadly the financial plan is that the Federal Government holds out a certain fund upon which the state may draw if the state will set up the required specific machinery to carry on the activity fostered by the federal act. This latter is a bribe to extravagance and again increases expense enormously. When applicable to health measures it makes of the public health both as a community and an individual factor merely a predatory sacrifice.

This is precisely the situation that will exist with the so-called Sheppard-Towner Maternity Bill and its proposed companion State and Legislative measures. It was the realization of this fact that led us in Illinois to fight the Maternity Bills in our Illinois Legislature.

It is our observation that the private charity is generally much more efficiently administered than public charity; that it is not susceptible to political wire-pulling and abuse. Added to this we have never noted a public charity measure so lacking in saving limitations as these welfare endeavors of which the Sheppard-Towner matter is a shining example.

The Illinois Special State Health Insurance Commission in its report to the General Assembly in 1919 covered the problem of maternity and infant mortality somewhat fully. While it was found that even with the progress which had been made in reducing these death rates, improvement seemed desirable, the Commission recommended no specific legislation further than a special investigation of this field. Inasmuch as in most countries having maternity benefits, these benefits are a sort of public health insurance system and are upon more or less of an insurance basis, with the father or the mother or both as contributors to the fund, and inasmuch as the majority of the Illinois Commission recommended definitely against any form of State Health Insurance and minority concurred in refraining from recommending maternity legislation except a further investigation of maternity and infant mortality, it was inferred that the commission did not believe the remedy for these maternity evils lay in the direction of public benefit or free medical care for all mothers alike.

Christian Scientists, Illinois State Medical Society and the Civic Federation of Chicago stood together in opposition to operation of maternity legislation from Washington by a bunch of laymen. Especially when such legislation could have been done much better by the State itself. Objections were that such legislation paved the way directly for infringement of individual liberties in the exceedingly personal relations of the home, and perhaps for the sweeping aside by the State of strong personal convictions, religious and otherwise; that it was entirely unnecessary; that it favored "State Medicine," and threatened in-

terference with freedom of personal choice; that it was paternalistic and socialistic in character and would undermine the foundations of individual independence which has been the pride and backbone of American citizenry.

The Civic Federation of Chicago, the Bureau of Public Efficiency and other civic organizations of tax-payers oppose certain state legislation on the ground that it was unnecessary, unsafe and unguarded against abuse; that it proposed to cover a field already covered by private and public agencies and to set up a piece of machinery that would be costly to start and burdensome within a short time.

With this mass and line of opposition the General Assembly gave those bills little encouragement and even would have given them less had it not been for the cogent argument "Federal Aid."

Advocates of the propaganda and State Aid Bills used the following argument before the members of the legislature:

"The people of Illinois will be taxed for this fund; surely you will not deny your own people some of the benefits for which they pay."

The appeal, of course, is strongest to the less populated states because they will get more out of the pot than they put into it, but even in the larger states, the tendency is to go in with a dispairing notion that they will get at least something out of the wreckage.

Fortunately at that time, a hope and not a definite promise was all that these agitators could hold forth, or the results in Illinois, in Massachusetts and in some other states might have been different.

Henry J. Harris, who is reported to be an advocate of "Federal Aid" at least as proposed in the so-called Maternity Bill, says of the Grants in Great Britain (maternity benefit systems in certain foreign countries, p. 68), "to describe the British System and to analyze the experience under it is an extremely difficult task; no other system of social insurance now in existence is so involved and contains so many features perplexing to the uninitiated * * * further, the statistical information published in the report on the operation of the system is so scanty that one receives little additional light from that source."

In the face of this mass of evidence from a nation that has labored under the problem of national aid for almost a century and with plentiful indication that our own beginnings in the same field of finance are tending towards the same rocks and shoals, how can any sane executive officer or legislator with any sense of responsibility to the people favor or promote this propaganda of State Aid or State Medicine?

During the years of our development, accompanied by hardships and handicaps when the country was scarcely settled, when the people were much poorer than they are today, we got along with a comparatively simple system of finance. The federal government financed its functions, the State financed its functions and the localities, as they came into existence, financed themselves.

If our civilization has advanced to a point where the nation must do things which heretofore the states, counties and cities have felt competent to do; if the functions of local government are becoming so burdensome that they can no longer carry on the burden and wish to turn to the national government for aid, we want none of the muddle financing which has burdened Great Britain.

"The Federal Government should only appropriate for those interests which are purely of national concern and clearly within the purposes for which the federal union was established," said the Honorable Frank O. Lowden, Illinois' great and constructive War Governor, in delivering the convocation address recently before the University of Chicago, and in which he warns of the ambitions of Washington Bureaus and the dangers of Federal and state aid.

The Federal Government should not be called upon for help in local matters or public charities and supervision of the public health at a time when local governments are giving more attention to the latter then ever before, and when the privately organized agencies for charity are co-operating with one another and with the proper public agencies with results of efficiency never dreamed of in former days. In this field indeed, which includes pointedly the activities of the Sheppard-Towner Maternity Bill, the federal government should proceed most cautiously of all.

Philanthropy will not mix satisfactorily with public finance because the finance of philanthropy is on an altogether different footing from compulsorily collected rates and taxes. As American citizens we are not ready to relieve a man from the care of his family and himself either through

the wholesale grants in aid encouraged by the Sheppard-Towner Bill or by grants in "aid" of unemployment, which are otherwise proposed.

In Denmark for some time, and in Great Britain at present, through a system of "State Aid," men make more money being idle than they can by working at their trades.

In this field there is great danger of violating our great principle of taxation for public purposes only. It is more than a coincidence that in all this uplift legislation certain grants find their way to voluntary boards and managers. Part of our own grants for research work and treatment of venereal diseases go to privately controlled Universities. The Sheppard-Towner Bill carries a broad provision as to extension lectures on maternity hygiene which it is believed might authorize the payment of funds not only to private universities or institutions, but possibly to social settlements and the like.

The danger of unrestrained centralization of government, into which our nation is heedlessly plunging at present, was strongly emphasized by Floyd E. Thompson, Chief Justice of the Missouri Supreme Court, in an address on "Some Dangerous Tendencies in Government" recently delivered by him at the Stephenson County Old Settlers' Reunion. Mr. Thompson said:

Probably the greatest single menace to the continuance of our form of government is the tendency to abolish autonomy of the state and to establish in its stead an unrestrained centralized national government. In this country the fountain of all authority is the citizen. The individual is surrounded by the town, the county, the state and nation like so many concentric circles, and each in proportion to its nearness to the citizen was, by our fathers, invested with the greatest possible jurisdiction. Then and now, between the tyranny of centralization and the freedom of the citizen, stands the integrity of the state.

America must awake from its lethargy, he concluded, "or this hundred-headed bureaucratic monster will devour us." The breakdown of faith in the underlying principles of both government and conduct on the part of the people themselves he believed to be due largely to the substitution of frills and bric-a-brac in place of the teaching of the great classics, poets, dramatists and orators in the schoolroom. "While our fathers were not learned in so many branches as our present-day educated men, they were instructed in the origin and history of human association and of human achievement." Religion, too, played a part in their education.

THE COMMITTEE ON MEDICAL HISTORY OF ILLINOIS.

In conformity with the report of the editor at the annual meeting in 1922, and again in 1923, and approved by the House of Delegates of the State Society, recommending the preparation for the Diamond Jubilee of the State Society in 1925, the history of the State Society and medical practice in the state since the incorporation of the society, June, 1850, the president of the Society has appointed a committee on medical history of the State Society as follows: Dr. O. B. Will, Peoria; Dr. Geo. A. Dicus, Streator; Dr. Carl E. Black, Jacksonville; Dr. Charles B. Johnson, Champaign; Dr. James H. Hutton, Chicago; Dr. Charles J. Whalen, Chicago, chairman.

Members of the profession having data in their possession that has a bearing on history of medical progress in Illinois will confer a great favor by loaning same to the committee. Data may be forwarded to any member of the committee; same will be duly acknowledged and returned to the owner if desired.

The profession will be interested in learning of the especial activities of the Society from its founding in 1850 until the beginning of the year 1925. Included should be the membership lists; the history of the parent and the district medical societies; publication; police duty and discipline; malpractice defense; a chronological list of officers, biographies of founders; principal officers and members of unusual prominence; meeting places during the progress of the years, and portraits of those who have carried the burden of keeping the Society up to its best capacities. Among the reproductions of historic and important documents should be one of the bill for a charter filed in 1850. None of these points should be overlooked. Many others will come to mind as the task progresses.

Members of the Society will be interested in learning how their organization came into being; who were its founders; what they were like; and what men and women, among the host of members from the inception of the Society until the present day, were most active in cherishing the Society and in forwarding its development. It is inspiring to trace the way in which the member-

ship has increased since 1850; the way in which the standing committees were organized and what they have accomplished; the relation of the Society to progressive health legislation—such as the founding of the first state board of health, and the medical legislation enacted, as well as constructive opposition to vicious medical legislation and the attacks on the Society by the quacks and other interests; the Society's survival of attempts at its disruption; and the objectives for which it has striven during its lifetime.

This history and scores of correlative details will be of interest to the profession and of value as a unit in the future history of the State of Illinois, the representative commonwealth of the Mississippi Valley. When the diamond jubilee arrives this record should be ready.

TRI-STATE DISTRICT MEDICAL ASSOCIATION.

AN INTER-STATE POST-GRADUATE MEETING

Des Moines, Iowa, Oct. 29, 30, 31 and Nov. 1, 1923.

All sessions of the general meeting and clinics held at the new Des Moines Women's Club Building.

Headquarters—Fort Des Moines Hotel.

First Day—Monday, October 29, 1923, 7 A. M.

1. Diagnostic Clinic (Medical). Heart failure, cardiac decompensation of any type.
   Dr. G. Canby Robinson, Member of Medical Staff. Johns Hopkins Hospital, Baltimore, Md.
2. Diagnostic Clinic (Surgical). Thoracic and abdominal cases.
   Dr. Evarts A. Graham, Prof. of Surgery, Washington University, Medical School, St. Louis, Mo.
3. Diagnostic Clinic (Medical).
   Dr. James B. Herrick, Prof. of Medicine, Rush Medical College, School of Medicine, Chicago, Ill.

Intermission.

4. Diagnostic Clinic (Surgical). Fracture cases.
   Dr. Frederick J. Cotton, Associate in Surgery, Harvard University, School of Medicine, Boston, Mass.
5. Diagnostic Clinic (Surgical). Stomach, gall-bladder and other abdominal cases.
   Dr. John B. Deaver, Prof. of Surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Afternoon Session—1 P. M.

6. Diagnostic Clinic (Urological).
   Dr. W. F. Braasch, Prof. of Urology, University of Minnesota, Graduate School of Medicine (Mayo Clinic), Rochester, Minn.
7. Diagnostic Clinic (Medical).
   Dr. Charles P. Emmerson, Dean and Prof. of Medicine, University of Indiana, School of Medicine, Indianapolis, Ind.
8. Diagnostic Clinic (Surgical).
   Dr. Frederick Atwood Besley, Prof. of Surgery, Northwestern University, School of Medicine, Chicago, Ill.
9. Diagnostic Clinic (Surgical). Abdominal cases, gall-bladder, ulcer, malignancies of colon or cecum.
   Dr. John F. Erdmann, Prof. of Surgery, New York Post-Graduate School of Medicine, New York, N. Y.
10. Symposium, Northwestern University, Medical Department.
    Supervised by Dr. Frederick Atwood Besley, Prof. of Surgery.
11. "The Mystery of the Abdomen."
    Dr. John B. Deaver, Prof. of Surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Intermission—Review Exhibits.

12. "The Relation of the Circulation and Respiration."
    Dr. G. Canby Robinson, Member of Medical Staff, Johns Hopkins Hospital, Baltimore, Md.
13. "Operative Treatment on Fractures, Old and New."
    Dr. Frederick J. Cotton, Associate in Surgery, Harvard University, School of Medicine, Boston, Mass.
14. "Purpura Hemorrhagica."
    Dr. H. C. Giffin, Mayo Clinic, Rochester, Minn. Associate Professor of Medicine, University of Minn., Graduatee School of Medicine.
15. Symposium, University of Indiana, Medical Department.
    Supervised by Dr. Charles P. Emmerson, Dean and Prof. of Medicine, Indianapolis, Ind.
16. "The Present State of Arthroplasties."
    Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University, School of Medicine, Baltimore, Md.
    Symposium, Northwestern University, Medical Department.
    Supervised by Dr. Frederick Atwood Besley, Prof. of Surgery. "Angina Pectoris."
    "Angina Pectoris and Operative Relief"—Dr. William A. Holmes, Assistant Prof. of Medicine.
    "The Sympathetic Nervous System and Bodily Pain"—Dr. S. Walter Ranson, Prof. of Anatomy.
    "The Electro-cardiography of Angina Pectoris"—Dr. James G. Carr, Assistant Prof. of Medicine.

Evening Session—7 P. M.

17. Symposium, University of Iowa, Medical Department.
    Supervised by Dr. Campbell P. Howard, Prof. of Medicine, Iowa City.
    "Visceral Syphilis."
    "Incidence of Visceral Syphilis in Iowa, with Especial Reference to Its Thoracic Manifesta-

tions"—Dr. Campbell P. Howard, Prof. of Medicine.
"Syphilis of the Digestive Organs"—Dr. W. E. Gatewood.
"Syphilis of the Nervous System"—Dr. Clarence Van Epps, Prof. of Therapeutics.
"Prognosis and Treatment of Visceral Syphilis"—Dr. F. H. Rohner, Assistant Prof. of Medicine.

18. "The Diagnosis and Treatment of Chronic Suppuration of the Lung."
Dr. Evarts A. Graham, Prof. of Surgery, Washington University, Medical School, St. Louis, Mo.

19. "Practical Points Concerning Diagnosis and Treatment of Heart Disease."
Dr. James B. Herrick, Prof. of Medicine, Rush Medical College, Chicago, Ill.

20. "What Progress Are We Making in the Treatment of Cancer?"
Dr. Byron B. Davis, Prof. of Clinical Surgery, University of Nebraska, School of Medicine, Omaha, Neb.

21. "The Early Stages of Chronic Bronchitis."
Dr. Charles N. Meader, Dean and Prof. of Medicine, University of Colorado, School of Medicine, Denver, Colo.

22. "Meeting the Surgical Indications of the Acute Abdomen by the Local Anesthesia Method." (Lantern slides.)
Dr. Robert E. Farr, Minneapolis, Minn.

Second Day—Tuesday, October 30, 7 A. M.

1. Diagnostic Clinic (Orthopedic). Orthopedic cases.
Dr. Fred H. Albee, Prof. of Orthopedic Surgery, New York Post-Graduate Medical School, New York, N. Y.

2. Diagnostic Clinic (Orthopedic). Joint diseases; sacro-iliac strains.
Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University, School of Medicine, Baltimore, Md.

3. Diagnostic Clinic (Medical). General medicine.
Dr. William S. Thayer, Emeritus Prof. of Medicine, Johns Hopkins University, School of Medicine, Baltimore, Md.

4. Diagnostic Clinic (Medical). (a) Kidney diseases (nephritis or infectious). (b) Blood diseases (anemia, lukemia, purpura). (c) Obscure eye cases (choriditis, uveitis, etc.).
Dr. Oliver H. Pepper, Assistant Prof. of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Intermission—Review Exhibits.

5. Diagnostic Clinic (Surgical). Abdominal, bone and nerve injury cases.
Dr. Dean Lewis, Prof. of Surgery, Rush Medical College, Chicago, Ill.

6. Diagnostic Clinic (Dermatology).
Dr. Frank C. Knowles, Prof. of Dermatology, Jefferson Medical College, Philadelphia, Pa.

7. Diagnostic Clinic (Surgical). Diseases of the thyroid; goiter cases.
Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minn.

Afternoon Session—1 P. M.

8. Diagnostic Clinic (Diabetes). The Treatment of Diabetes Mellitus.
Dr. Elliott P. Joslin, Prof. of Clinical Medicine, Harvard University, School of Medicine, Boston, Mass.

9. Symposium, University of Chicago (Rush) Med. Dept.
Supervised by Dr. Dean Lewis, Prof. of Surgery.
"Infections."
"General Infections and Treatment"—Dr. Dallas B. Phemister, Assistant Prof. of Surgery.
"Infections in Diabetic Cases"—Dr. Vernon C. David, Assistant Prof. of Surgery.
"Chronic Surgical Infections"—Dr. Arthur Dean Bevan, Head of Department of Surgery.
"Blood Findings in General Infections" — Dr. George F. Dick, Assistant Prof. of Medicine.
"Infections of Gastro-Intestinal Tract"—Dr. Clifford G. Grulee, Associate Prof. of Medicine (Ped.).

10. Subject later.
Dr. Edward William Archibald, Prof. of Surgery, McGill University, Montreal, Canada.

11. "Tumors of the Breast."
Dr. John F. Erdmann, Prof. of Surgery, New York Post-Graduate School of Medicine, New York, N. Y.

Intermission—Review Exhibits.

12. "The Symptoms of Nephritis, Their Bearing on Treatment."
Dr. Oliver H. Pepper, Assistant Prof. of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

13. "Insulin and the General Practitioner."
Dr. Elliott P. Joslin, Prof. of Clinical Medicine, Harvard University, School of Medicine, Boston, Mass.

14. "The Surgical Treatment of Ulcer of the Duodenum and Stomach."
Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minn.

15. Subject later.
Dr. William S. Thayer, Emeritus Prof. of Medicine, Johns Hopkins University, School of Medicine, Boston, Mass.

16. Symposium "Diabetes."
Dr. Elliott P. Joslin, Prof. of Clinical Medicine, Harvard University, School of Medicine, Boston, Mass.
Dr. Louis H. Nedburgh, Ann Arbor, Mich.
Dr. Roland Turner Woodyatt, Associate Prof. of Medicine, Rush Medical College, Chicago, Ill.

Evening Session—7 P. M.

17. "Conclusions Drawn from a Series of 260 Cases of Gangrenous Appendicitis."

Dr. Willis D. Gatch, Prof. of Surgery, Indiana University, School of Medicine, Indianapolis, Ind.

18. Symposium, "Fractures."
"Pott's Fracture and Fracture of the Tarsal Bones."
Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University, School of Medicine, Baltimore, Md.
"Fractures of the Shoulder and Hip Joints."
Dr. Frederick J. Cotton, Associate in Surgery, Harvard University, School of Medicine, Boston, Mass.
"The Role of the Periosteum in the Repair of Fractures."
Dr. Leonard W. Ely, Associate Prof. of Orthopedic Surgery, Stanford University, School of Medicine, San Francisco, Calif.
"Complication of Fractures."
Dr. Dean Lewis, Prof. of Surgery, Rush Medical College, School of Medicine, Chicago, Ill.
"Colles' Fracture and Fracture of the Carpal Bones."
Dr. Kellogg Speed, Assistant Prof. of Surgery, Rush Medical College, Chicago, Ill.
"Operative Treatment of Recent Fractures and Non-Unions."
Dr. Hugh H. Trout, Roanoke, Va.

19. "The Relationship Between Dermatology and Internal Medicine."
Dr. Frank C. Knowles, Prof. of Dermatology, Jefferson Medical College, Philadelphia, Pa.

20. "Reconstruction Surgery."
Dr. Fred H. Albee, Prof. of Orthopedic Surgery, New York Post-Graduate Medical School, New York, N. Y.

Third Day—Wednesday, Oct. 31, 7 A. M.

1. Diagnostic Clinic (Neurosurgical). Neurosurgical cases.
Dr. Charles H. Frazier, Prof. of Neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

2. Diagnostic Clinic (Neurosurgical). Neurosurgical cases.
Dr. Ernest Sachs, Prof. of Clinical Neurosurgery, Washington University, School of Medicine, St. Louis, Mo.

3. Diagnostic Clinic (Medical). Pernicious Anemia.
Dr. Charles F. Martin, Dean and Prof. of Medicine, McGill University, Faculty of Medicine, Montreal, Can.

Intermission—Review Exhibits.

4. Diagnostic Clinic (Surgical). (a) Female children with chronic pyelitis; (b) kidney infection (tubercular or otherwise); (c) genital tuberculosis with lesions of the epididymis; (d) gastric ulcer, lesions of the gall-bladder; (e) fracture of the femur.
Dr. Hugh Cabot, Dean and Prof. of Surgery, University of Michigan, Medical School, Ann Arbor, Mich.

5. Diagnostic Clinic (Medical). Pneumonia, lobar and broncho.
Dr. Francis G. Blake, Prof. of Medicine, Yale University, School of Medicine, New Haven, Conn.

6. Diagnostic Clinic (Surgical).
Dr. George W. Crile, Prof. of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

Afternoon Session—1 P. M.

7. Diagnostic Clinic (Surgical).
Dr. Edward William Archibald, Prof. of Surgery, University of McGill, Montreal, Canada.

8. Diagnostic Clinic (Surgical).
Dr. Allen Whipple, Prof. of Surgery, Columbia University, College of Physicians and Surgeons, New York, N. Y.

9. Symposium, and other contributions by Staff, Medical Department, University of Wisconsin.
Supervised by Dr. George V. I. Brown, Milwaukee, Wis.
"The Development of New Arsenicals in the Treatment of Neuro-Syphilis."
Dr. A. S. Loevenhart, Prof. of Pharmacology, University of Wisconsin.
Dr. W. F. Lorenz, Prof. of Neuro-Phychiatry, University of Wisconsin, Director of Wisconsin Phychiatric Institute.
"The Surgery of Spastic Paralysis."
Dr. Frederick J. Gaenslen, Orthopedic Surgeon to the Wisconsin General Hospital at the University of Wisconsin.
"Lymphoid Resistance and Susceptibility."
Dr. C. H. Bunting, Prof. of Pathology, University of Wisconsin.
"The Surgery of Cleft Palate with Special Reference to a New Method of Treatment."
Dr. George V. I. Brown, Plastic Surgeon to the Wisconsin General Hospital at the University of Wisconsin.

10. "Arterial Hypertension: Its Management and Its Significance."
Dr. William A. Jenkins, Prof. of Medicine and Clinical Medicine, University of Louisville, Medical Department, Louisville, Ky.

Intermission—Review Exhibits.

11. Subject later.
Dr. Charles H. Frazier, Prof. of Neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

12. "Cardiac Sufficiency."
Dr. Charles F. Martin, Prof. of Medicine, McGill University, Faculty of Medicine, Montreal, Can.

13. "Differentiation Between the Quick and the Dead."
Dr. George W. Crile, Prof. of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

14. "Observations on Pneumonia."
Dr. Francis G. Blake, Prof. of Medicine, Yale University, School of Medicine, New Haven, Conn.

Evening Session—7 P. M.

15. Symposium, Western Reserve University (Crile Clinic), Cleveland, Ohio.
Supervised by Dr. George W. Crile, Prof. of Surgery.
"The General Roles of Surgery, the X-rays and Radium in the Treatment of Benign and Malignant Tumors of the Uterus."
Surgical side by Dr. George W. Crile.
X-ray Therapy by Dr. U. V. Portmann.
Radium Therapy by Dr. T. E. Jones.

16. "The Factor of 'Coincidence' in Surgery."
Dr. Leonard Freeman, Prof. of Surgery, University of Colorado, School of Medicine, Denver, Colo.

17. "Certain Factors in the Differential Diagnosis of Non-acute Surgical Lesions of the Stomach, Biliary Tract and Appendix."
Dr. Allen Whipple, Prof. of Surgery, Columbia University, College of Physicians and Surgeons, New York, N. Y.

18. Symposium, University of Michigan, Medical Department.
Supervised by Dr. Hugh Cabot, Dean and Prof. of Surgery.
"Nephritis."
"The Etiology of Nephritis"—Dr. L. H. Newburgh.
"The Pathology of Renal Diseases"—Dr. A. S. Warthin.
"Infections of the Kidney Other Than Tubercular"—Dr. Hugh Cabot.

19. "Some of the More Common Neurosurgical Conditions."
Dr. Ernest Sachs, Prof. of Clinical Neurosurgery, Washington University, School of Medicine, St. Louis, Mo.

Fourth Day—Thursday, Nov. 1, 7 A. M.

1. Diagnostic Clinic (Pediatrics). Infants suffering from nutritional disturbances, diarrhea and feeding difficulties.
Dr. William McKim Marriott, Prof. of Pediatrics, Washington University, School of Medicine, St. Louis, Mo.

2. Diagnostic Clinic (Surgical). Fractures, cases of osteomyelitis, bone tumors, various joint lesions, traumatic peripheral nerve lesions and other general surgical conditions of the extremities.
Dr. Clarence L. Starr, Prof. of Surgery, University of Toronto, Faculty of Medicine, Toronto, Canada.

3. Diagnostic Clinic (Medical). Cases of urethritis, prostatitis, hematuria (various types), tuberculosis of urinary or seminal tract along with lantern slides, bringing out points in diagnosis and treatment.
Dr. Hugh H. Young, Clinical Prof. of Urology, Johns Hopkins University, School of Medicine, Baltimore, Md.

Intermission—Review Exhibits.

4. Diagnostic Clinic (Medical). Heart and lung cases.
Dr. Frank Billings, Prof. of Medicine, Rush Medical College, Chicago, Ill.

5. Diagnostic Clinic (Surgical). Some medical and surgical aspects of diseases of the biliary apparatus, including gallstone disease, carcinoma, chronic pancreatitis and all those conditions which result in infections of the biliary passages, jaundice, etc.
Dr. William J. Mayo, Mayo Clinic, Rochester, Minn.

Afternoon Session—1 P. M.

6. Symposium, University of Minnesota Post-Graduate School of Medicine (Mayo Clinic).
"Diseases of the Thyroid."
"Significance of the Clinical and Pathological Findings in Conditions Associated with Abnormal Thyroid Function"—Dr. Henry S. Plummer, Prof. of Medicine.
"Practical Value of Basal Metabolism Estimations in the Management of Diseases of the Thyroid"—Dr. Walter M. Boothby, Assistant Prof. of Medicine.
"Surgery of the Thyroid and Its Mortality"—Dr. John DeJ. Pemberton, Prof. of Surgery.

7. "Remarks on the Diagnosis and Treatment of Various Diseases of the Prostate." (Lantern slides.)
Dr. Hugh H. Young, Clinical Prof. of Urology, Johns Hopkins University, Baltimore, Md.

8. "Some Practical Points in Infant Feeding."
Dr. William McKim Marriott, Prof. of Pediatrics, Washington University, School of Medicine, St. Louis, Mo.

9. "Biophysics as an Approach to Scientific Medicine of the Future."
Dr. William J. Mayo, Mayo Clinic, Rochester, Minn.

Intermission. Review Exhibits.

10. "The Treatment of Compound Fractures."
Dr. Clarence L. Starr, Prof. of Surgery, University of Toronto, Faculty of Medicine, Toronto, Canada.

11. "A Consideration of Some of the Problems in the Treatment of Syphilis Today."
Dr. William Allen Pusey, Emeritus Prof. of Dermatology, University of Illinois, School of Medicine, and President-Elect, American Medical Association, Chicago, Ill.

12. "The Fashioning of the English-speaking Peoples."
Sir Robert Falconer, President of University of Toronto, Toronto, Canada.

13. Foreign Guests.
Sir William I. DeCourcy Wheeler, President of the Royal College of Surgeons of Ireland, Dublin, Ireland.
Mr. Arthur E. Webb-Johnson, C.B.E., D.S.C., F.R.C.S., The Middlesex Hospital, Medical School, W. 1, London, England.

Banquet, 7 P. M., Nov. 1, 1923.

ADDRESSES:

Sir Robert Falconer, President of University of Toronto, Toronto, Canada.

Sir William DeCourcy Wheeler, President of Royal College of Surgeons of Ireland, Dublin, Ireland.

Dr. Ray Lyman Wilbur, President of Leland-Stanford University and President of American Medical Association, Stanford University, California.

Dr. Charles F. Martin, Dean and Prof. of Medicine, McGill University, Faculty of Medicine, Montreal, Canada.

Honorable Albert B. Cummins, United States Senator, Washington, D. C.

Honorable Nathan E. Kendall, Governor of Iowa, Des Moines.

OTHER DISTINGUISHED CITIZENS

NOTE:—If it is possible, Dr. Leonard W. Ely, Assistant Professor of Orthopedic Surgery, Leland Stanford University, wwill give an address, "The Second Great Type of Chronic Arthritis."

NATIONAL CONVENTION OF ANESTHETISTS WILL MEET IN CHICAGO.

SECOND ANNUAL CONGRESS OF ANESTHETISTS.

National Anesthesia Research Society.
Interstate Association of Anesthetists.
Mid-western Association of Anesthetists.
Chicago Society of Anesthetists.
Headquarters Scientific Sessions and Exhibits Auditorium Hotel.

Chicago, October 22-24, 1923.

All scientific sessions of the Congress as well as the exhibits will be held on the ninth floor of the Auditorium Hotel. As the Clinical Congress of Surgeons will be in session across the street at the Congress Hotel both meetings will be entirely accessible to all in attendance.

Among many interesting papers to be read will be: Researches on Ethylene, Acetylene and Similar Products as Anesthetics; Symposium on Handling Handicapped Patients; Symposium on Nitrous Oxide-Oxygen Anesthesia; Special Session Devoted to Anesthesia in Oral Surgery and Dentistry; Sessions devoted to papers on Clinical and Technical Development of Methods of Anesthesia. Several foreign anesthetists plan to read papers.

Dr. Isabella C. Herb is in charge of the forenoon devoted to Clinics. Laboratory demonstrations on subjects pertinent to Anesthesia will be given by prominent research workers. Dr. Frank J. Bernard and his committee are planning the social events for the entertainment of visiting ladies. Annual dinner Tuesday evening, October 23, Auditorium Hotel. For further information address Dr. F. H. McMeehan, Secretary, Lake Shore Road, Avon Lake, Ohio, or Chicago Society of Anesthetists; J. E. H. Atkeisson, M. D., President, 1954 Milwaukee Ave.; Frances E. Haines, M. D., Secretary, 3239 Washington Blvd.

SOUTHERN MEDICAL ASSOCIATION.

During the meeting of the Southern Medical Association in Washington, D. C., Nov. 12-15, it is hoped that the Alumni of each of the Medical Schools represented will meet together at dinner. The evening of Wednesday, November 14, has been set apart for that purpose and dining rooms have been already engaged.

The committee desires to know approximately the number of diners to be expected at each of these reunions. Those who expect to attend should therefore notify the undersigned by the end of October.

Tom A. Williams,
Chairman Alumni Dinners,
Southern Medical Association.

1746 K Street.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

Washington, D. C.....October 8, 1923
Chicago, Illinois .....October 8, 1923
San Francisco, Calif.....October 8, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. Cumming,
Surgeon General.

THE MEDICAL PROFESSION AND THE CREDIT SYSTEM.

INGENIOUS MAIL ORDER MERCHANT HAD SURE TEST FOR CUSTOMERS.

A friend of mine who used to sell talking machines by mail order hit on a simple method for finding out which persons he might trust, writes Fred Kelly in the *Nation's Business.*

On receiving an answer to his advertisements, he wrote to the inquirer asking for the name of his family physician, as reference. If this name was forthcoming, my friend then shipped the talking machine without further ado. He never even bothered to write to the family physician.

His reasoning was this: people always pay the doctor last. If a man will give his doctor's name as reference in a mail order transaction he surely doesn't owe the doctor any money. And if he doesn't owe the doctor he probably doesn't owe anybody. Hence, presumably, he is a fair risk for a talking machine or other goods on credit.

THE IMPORTANCE OF THE PLACENTA, ESPECIALLY THE TROPHOBLAST, IN RESPECT TO THE DURATION OF PREGNANCY AND THE INCEPTION OF LABOR

The internal secretory function of the placenta resides in the trophoblast. Substances produced by it protect the developing ovum by limiting uterine contractility. This restraint diminishes when the syncytium begins to show signs of age. With its decay, labor begins. When the restrictive placental action is abnormally small or stimuli of abnormal strength exist, abortion or premature birth takes place. A dried placental extract was effective in the author's experience in cases of habitual abortion and premature birth. The oxytocic action of placental extract referred to by other writers is not specific, but is a property of all the organic extracts. —K. de Snoo (*Monatsschrift für Geburtshülfe und Gynäkologie*, 1922, 57:1).

ON DEPRESSIN, A NEW BIOLOGICAL PREPARATION WHICH REDUCES PATHOLOGICAL BLOOD PRESSURE

The author has long felt the need of a cardiac depressant available under all circumstances. Iodine owes its effectiveness to the fact that a large percentage of arteriosclerotics are tertiary syphilitics. It is entirely ineffectual in pure arteriosclerosis. Diuretin in angina pectoris and similar angiospastic conditions, and salt-poor diet or physical means in given instances have reduced blood pressure, but do not maintain the reduction.

Intramuscular injection of a variety of avirulent killed bacteria was found by the author to produce a gradual effect resembling the gradual dissolution of bacteria in the human organism. Preferably he used colon bacilli, embedding them in gelatine in ampoules of seven strengths, each double its predecessor. Three cubic milligrams softened by warmth were mixed with the same amount of sterile salt solution in the ampoule and injected, for successive daily injections. The injection was painless and the temperature rose but slightly, if at all.

Cases of single arteriosclerosis are most susceptible, such as arteriosclerosis of the brain with torturing headaches, vertigo, deafness and functional brain disturbances like failure of memory, inability to concentrate and disinclination to work. These symptoms disappear after from six to ten injections in proportion as the blood pressure falls. In three instances of apoplectic seizure an intentionally large injection the day following caused a quick fall of blood pressure and accompanying abatement of the apoplectic symptoms.

In cases of cardiac insufficiency and hypotonia where digitalis fails, depressin enables it to act. In angina pectoris two or three injections dispelled the pain. The ineffectiveness of the remedy in luetic angina establishes a differential diagnosis.

Usually in presence of contracted kidneys it is also ineffective, perhaps because of toxic action through the vasomotor centers. But in arthritis deformans Zimmer reports good results with depressin. In eight cases with stiff joints where the usual methods of treatment brought no result, depressin afforded immeasurable relief and restored mobility. In four cases of exudative pleurisy, too, the result was very striking. In all there was a thick serous exudate unimproved by autoserotherapy: a single injection of depressin caused astonishingly rapid absorption of the exudate, in one case with a chill, in the others without mentionable temperature.—C. Zülzer (*Die Therapie der Gegenwart*, July, 1922.)

ADIPOSOGENITAL DYSTROPHY

The three cases reported all showed pituitary changes and none gave signs of brain tumor or pathological cerebral pressure, while congenital defects were evident, such as retinitis pigmentosa, polydactyly and atresia ani, as well as characteristic stigmata of cerebral underdevelopment, the chief of these being a singular mental torpidity. Basal metabolism was diminished, especially in one patient. Digestive disturbances were frequent. This new symptom complex is attributed by the author to a primary developmental brain deficiency, localized especially in the metabolism center. Careful consideration of the pathogenesis of Fröhlich's disease indicates a pure pituitary and a pure cerebral form as its extremes. In the majority of cases of adiposogenital dystrophy the symptoms indicate that the pathological cause, whether a tumor of the pituitary gland or in its vicinity, or simply cerebral pressure, impinges on both the pituitary and the brain. Even autopsy findings have afforded no means of separating these two factors. Similar functional disturbances result, whether the stimulative action of the intermedial secretion on the midbrain centers is defective, or whether these centers themselves are interfered with. Only continued study can clear up this problem. The same with regard to diabetes insipidus. Here, too, either a purely pituitary or a purely cerebral condition may account for the disturbance of the fluid regulating center in the tuber cinereum. Between these two extremes lie the larger number of cases.—A. Biedl (*Medizinische Klinik*, Aug. 6, 1922).

Dentist—What kind of filling do you want in your tooth, son?

Boy—Chocolate, doctor.—*Med. Life.*

SUBSCRIBERS TO THE LAY EDUCATIONAL FUND OF THE ILLINOIS STATE MEDICAL SOCIETY CORRECTED TO DATE.

Below is a list of subscribers from down state and Chicago to the Lay Educational Fund as per letter sent members soliciting fund and cooperation. The list has been carefully checked to make sure of accuracy. If an error has crept in kindly note same and forward to the committee:

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W. M. Miller.....Rockford
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P. McGinnis.....Joliet
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E. L. Mullin.....Manlius
B. V. Marquis.....Buffalo Prairie
H. E. Middleton.....Alton
J. J. McShane.....Springfield, Ill.
C. M. Murrell.....Matherville, Ill.
Wm. D. Madison.....Eureka
Van Buren Mauricean.....Morton
James A. Marshall.....Pontiac
Margaret A. Mills.....Rockford
Ansel O. Magill.....Decatur
C. E. McClelland.....Decatur
Herman J. Neubauer.....Hinckley
J. R. Neal.....Springfield
Wm. Niergarth.....Pekin

C. S. Nelson.....Springfield
D. R. Nelson.....Moline
E. G. Nilson.....Kankakee
G. P. Noren.....Kewanee
E. H. Oelke.....Wheaton
Fred O'Hara.....Springfield
F. J. Otis.....Moline
H. M. Orr.....La Salle
A. B. Ormsby.....Murphysboro
J. W. Ovitz.....Sycamore
John H. Oliver.....Kewanee
Mather Pfeiffenberger.....Alton
Phebe Pearsall.....Moline
R. P. Peairs.....Bloomington
L. S. Pederson.....Manhattan
Theodore S. Proxmire.....Lake Forest
J. A. Plumer.....Trivoli
F. A. Palmer.....Morris
H. L. Pettit.....Morrison
W. B. Peck.....Freeport
T. A. Pettepiece.....Freeport
H. F. Peterson.....Dundee
P. H. Poppens.....Princeton
Ely E. Perisho.....Streator
Plumer & Grimm.....Farmington
Arthur Parsons.....Geneseo
S. G. Peterson.....Rutland
C. E. Price.....Robinson
G. H. Parmenter.....Beecher City
J. A. Poling.....Freeport
M. D. Pollock.....Decatur
A. E. Peterson.....Toluca
O. L. Pelton.....Elgin
O. L. Pelton, Jr.....Elgin
David B. Penniman.....Rockford
H. A. Patterson.....Joliet
L. S. Pederson.....Manhattan
R. B. Rice.....Mt. Carroll
F. E. Roberg.....Joliet
W. K. Roberts.....Sheldon
A. E. Rives.....East St. Louis
J. H. Raach.....Wheaton
A. P. Robertson.....Alton
Reagan & Nelson.....Canton
W. C. Runyon.....Metamora
Daniel W. Rogers.....Highland Park
L. T. Rhoads.....Lincoln
L. F. Robinson.....Ullin
Wm. J. Rose.....Columbia
M. E. Rose.....Decatur
Lawrence A. Ryan.....East St. Louis
M. M. Rickett.....Ivesdale
M. L. Rosensteil.....Freeport
C. B. Ripley.....Galesburg
Henry Reis.....Belleville
H. H. Roth.....Murphysboro
J. O. Renwick.....Warren
E. H. Raschke.....La Grange
H. P. Reuss.....Granite City
A. R. Rikli.....Naperville
W. J. Rideout.....Freeport
Peter J. Reynolds.....Dwight
R. T. Rodway.....Roanoke
Rock Island Medical Society.....Rock Island
Isaac D. Rawlings.....Springfield
B. Socoloff.....Clifford
H. L. Le Saulnier.....Red Bud
Allen Salter.....Lena
A. M. Shaw.....Adrian
O. M. Slater.....Atwood
A. L. Stuttle.....Williamsville
O. W. Staib.....Bartlett
F. B. Schroeder.....Princeton
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C. D. Swickard.....Charleston
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G. A. Sihler.....Litchfield
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Ray Sexton.....Streator
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W. E. Shallenberger.....Canton
W. G. Sachse.....Morris
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D. G. Smith.....Freeport
A. M. Swanson.....Rockford
Karl Snyder.....Freeport
Wm. Schoennesshoefer.....Streator
Guy Sloan.....Bloomington
E. P. Sloan.....Bloomington
O. O. Stanley.....Decatur
E. C. Spitze.....East St. Louis
C A. Stokes.....Edinburg
H. G. G. Schmidt.....Elgin
W. N. Sievers.....White Heath
Chas. H. S. Starkel.....Belleville
E. E. Shelly.....Freeport
Harold Swanberg.....Quincy
H E. Stephen.....Joliet
A. Schreffler.....Joliet
A. G. Sellards.....Joliet
Lena Stewart.....Joliet
A. R. Steen.....Joliet
J. H. Siegel.....Collinsville
A. M. Shaw.....Adrian
Wilbur F. Spencer.....Geneseo
J. E. Scholes.....Bradford
G. Tophorn.....
E. R. Talbot.....Joliet

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Stewart C. Thomson ..... Byron
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L. C. Tate ..... Springfield
L. C. Taylor ..... Springfield
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Edward H. Weld and Anna Weld ..... Rockford
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Note—Will County Medical Society contributed $350.00 to the fund. Rock Island County Medical Society contributed $100.00 to the fund. Madison County, Winnebago County and the Tri-City Medical Society also contributed. These five organizations are the only County Societies that as organizations have contributed to the fund.

The proposed campaign cannot be prosecuted without funds; it must be supported by popular subscription. It is hoped that every doctor will subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

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Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

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MAKE CHECKS PAYABLE TO THE ILLINOIS STATE MEDICAL SOCIETY.

Name.....M. D.
Street .....
City..... County.....

Sign the above pledge card, make out a check

payable to the Illinois State Medical Society and mail both in an envelope addressed as follows:

From

.....

.....

.....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust & Savings Bank,
4738 Broadway,
Chicago, Illinois."

25 E. Washington St.,
Chicago, Ill.

Lay Publicity Committee.

CHICAGO MEDICAL SOCIETY SUBSCRIBERS TO THE LAY EDUCATIONAL FUND OF THE ILLINOIS STATE MEDICAL SOCIETY

The list has been carefully checked to make sure of accuracy. If an error has crept in, kindly note same and forward to the Committee.

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Lucius H. Zeuch

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Name.....M. D.

Street .....

City..... County.....

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From .....

ILLINOIS STATE MEDICAL SOCIETY,
c/o Cashier, Sheridan Trust & Savings Bank,
4738 Broadway,
Chicago, Illinois."

Lay Publicity Committee, 25 E. Washington St.

Correspondence

THE DIFFERENCE BETWEEN INVESTING AND SPECULATING

Chicago, Ill., Sept. 15, 1923.

To the Editor:

The president of a young firm that manufactures biologics and pharmaceutical preparations was brought to me by a mutual friend the other day to obtain information as to floating a bond issue to finance his rapidly-growing business. The mutual friend, a man of sound judgment and high integrity, vouched for the manufacturer, his thorough honesty and capability. The manufacturer's clear and comprehensive reports told further that he had an excellent, well-managed, prosperous business.

"We've made a good deal of money," said the manufacturer, "and put it back into the business, but in spite of everything we can do, we are, every day, more and more behind in filling our increasing orders. We've grown rapidly in our few years of existence and can keep on expanding at the same rate, but our opportunities are so great that I don't want to wait five or ten years in growing into them. We've got everything we need, except capital."

"Why don't you issue stock?" I asked. "You haven't anything to secure a bond issue properly considering the large sum you need."

"I'd rather issue bonds," said the manufacturer, "because I want to put every cent I can get into the business. It would cost at least 15 per cent, probably more, to put through a stock-selling campaign, naturally offering our stock to physicians and surgeons who know the value of our products. It would be much cheaper to issue bonds. Don't you see I'm trying to do everything for the best interests of the business? It's a safe proposition."

"Safe as a good, fine business speculation," I answered, "but not safe as a bond issue. You haven't adequate security for a bond issue. Now, don't misunderstand my use of the term 'speculation.' By it I mean honest, competent, forceful and resourceful business enterprise, the thing that has built this country's prosperity. I don't mean gambling or wildcatting. But every business, no matter how sound and worthy, faces risks. Persons who would put money into your business now would be taking risks. It would be a sensible, sound, fair risk, no doubt, to buy your stock. Your fine earning record and your apparent prospects indicate that you, in all likelihood, will pay handsome dividends. Your stockholders will be repaid for the risk in buying stock. They ought to have the reward. They would deserve it.

"But what pay would your bond holders receive for taking the same risk, if you could issue bonds instead of stock? You can't offer more than current rates of interest on long-time securities. You can't adequately secure the bonds."

"But I don't see where there's such a tremendously big risk in my business," objected the manufacturer. "Don't you believe my reports?"

"Absolutely, I believe them. I think you are the kind of man who should be encouraged. I think your business achievements are splendid and your opportunities for development excellent. I think you have as fine and desirable a bit of speculation as I've seen in a year, and by speculation I mean the best kind of business enterprise. But your business and every other good business unavoidably faces risks, and you haven't any right to let bond holders incur such risks. I don't think one of your bond holders would lose a penny, but you haven't security that says that, and security is the thing that counts in a bond issue."

"You spoke of the advantages certain of your patents give you over competitors. Suppose some competitor gets hold of patents superior to yours? That's easily possible, isn't it? Further, as you cut into the business of some of these large, old competitors who are firmly established and well financed, they're going to give you a still harder fight. I don't believe anything like that will keep you from growing or prospering, but it might, and if it did, where would your bond holders be? They'd lose, wouldn't they? Yes, your stockholders would lose, too, but they would have taken the risk, because of the large returns offered."

However, I passed the manufacturer's bond proposal on to members of the Investment Bankers' Association of America without comment, other than that I had thoroughly dependable information as to the manufacturer's high integrity and capability. His proposal was rejected. . Subsequently he sold stock to several wealthy business men who saw the wonderful business opportunity the manufacturer had. They

were men who could afford to take a fair business risk because of the greater reward offered. Had they been men of limited income, dependent on their own earnings I doubt if buying that stock would have been wise. Men of limited incomes who are dependent solely on their earnings should, in seeking to build up an independent income for themselves or their families, buy sound bonds. Only if they can afford to risk the possibilities of loss and to wait for dividends can they afford to buy stocks and then only in good, honest enterprises.

The foregoing is one of the best examples of the difference between speculating and investing that I have seen in several months. Speculating is legitimate and desirable for men who can afford it, but you have noticed that, by implication at least, I have not included gambling and wildcatting, buying and selling on margins as speculation for the average man. Speculating is buying stocks, or anything else, which the buyer has sound reason to believe, either from experience or from dependable advice, will be profitable. Of course, there is speculative selling, too, but for the average man who is not a trader, speculation usually consists in buying into some honest, sound, promising enterprise. Investing consists of putting money into something, usually bonds, that are so well secured that payment of the principal and interest are assured. Buying wildcat oil, flying machine, automobile, radio, a patent device and other stocks at the invitation of a promoter whose integrity and business ability are not fully known is not speculating. It isn't even gambling. There's no risk about it—it is certain that the money is lost.

There is only one way for any man who is not a specialist in investment securities to invest safely or to speculate wisely. That is to deal with an investment banking house whose integrity and capability are proved.

SAMUEL O. RICE
Educational Director, Investment Bankers' Association of America

ILLINOIS FEDERATION OF WOMAN'S CLUBS IS GOING AFTER THE THING IN THE RIGHT WAY

Manhattan, Ill., August 23, 1923.

Dr. E. H. Ochsner,
2155 Cleveland Ave., Chicago, Ill.

My dear Dr. Ochsner: As a retired physician, whose early years were spent in general practice, and who now is interested in Public Health work, I have followed the ILLINOIS MEDICAL JOURNAL and its campaign for lay education, with interest. In the JOURNAL for July it is suggested that some medical representative appear before Women's Clubs and discuss questions of interest to the lay bodies. In this case special reference was made concerning the Sheppard-Towner Act.

As State Health Chairman for the Federation, I am very much interested and feel that this is just what we need. The difficulty I have found in a matter of this kind is that individual physicians may be personally prejudiced or even ignorant of these matters and that we may be informed as to the real issues, it was decided that you be asked to address us through our official paper, the *Edict*. May we hope to have from you a paper setting forth the merits or demerits of the Sheppard-Towner Act, for the October issue?

One of the co-operating agencies which we have included in our year's work, is the State Medical Society, and I am suggesting to all clubs that where they wish help on matters of interest in Public Health that they appeal to the County Medical Society, and not to individual physicians, thus getting the official view of a matter and not that of some individual, who may be a Christian Scientist, or chiropractor depending on the leanings of the president of that particular club.

I feel that if the State Medical Society will take this request seriously, we will have an opportunity to line up officially, large groups of women who will take an intelligent interest in better health and better legislation in the future, not following blindly, as I find them doing and as I found many physicians doing last winter, who would confess that they did not know what a proposed piece of legislation was about. They just did as they were told in the matter. Hoping that I may have an early and favorable reply, I am, sincerely yours,

EVA M. WILSON.

THE WASSERMAN TEST DURING PREGNANCY

Among approximately 5000 routine maternity cases admitted to the Robinson Memorial, Massachusetts Homeopathic Hospital, Boston, during the period between 1917 and 1920, 461, or 8.2 per cent, showed a positive Wassermann reaction. Of this number 391, or 7.8 per cent, gave a definitely strong reaction, and 231, or 4.2 per cent, were strongly positive.

Original Articles

REPORT OF BENIGN TUMORS OF THE GASTRO-INTESTINAL TRACT*

DAMON A. BROWN, M. D.
PEORIA, ILLINOIS

The purpose of this paper is to present a series of benign tumors of the gastro-intestinal tract and will consist essentially of case reports, showing some problems in differential diagnosis. The purpose of the paper is to introduce nothing new but rather to stimulate an interest in differential diagnosis of conditions which occur not infrequently in the practice of those especially interested in gastro-intestinal diseases.

The first case, which I wish to discuss is that of a young married white woman, twenty years of age. Family history negative with the exception of the death of her father at the age of fifty-eight, from pulmonary tuberculosis. Past history was negative with the exception of an appendectomy done in 1914. This patient was seen early in 1922. Menstrual history negative. Marital history—one pregnancy which resulted in full term child, aged thirteen months. The chief complaint was that in August, 1921, she developed a sore throat, with difficulty in swallowing. This condition was neglected by the patient until December, 1921, when she consulted her physician. At that time there is no note of the condition found in the patient's throat, with the exception that she had been fed by a tube through the mouth. She was seen by us early in January, 1922, at which time examination revealed a tumor growing from the posterior wall of the pharynx just above the epiglottis. The tumor was hard, irregular, attached by a broad base to the posterior wall of the pharynx and almost completely filling the throat. It had grown to such size that swallowing was impossible and dyspnea quite marked. Patient was markedly emaciated, her only source of food having been rectal feedings for about two weeks. The condition of the patient demanded something radical in the way of establishing nutrition and for this reason a gastrostomy was done on January 7. As a result of further examination in attempting to make a diagnosis of the tumor, a Wassermann was taken as a matter of routine and, to our surprise, turned out four plus positive. There had been a negative history of luetic infection and no other evidence of lues that we could detect. The patient was gaining strength and weight on feedings through the gastrostomy and was put upon antiluetic treatment. At the end of two weeks the tumor mass in the throat had decreased in size sufficiently to enable her to swallow soft foods without much difficulty. By March 6, 1922, the condition had improved sufficiently to warrant closing the gastrostomy and under further treatment, the patient made an almost complete recovery.

The reason this case is included in this report is the rather unusual location for a gumma, which we took the tumor to be, and for the necessity of doing Wassermanns as a matter of routine, or whenever a diagnosis is in doubt. In fact, the one lesson that this case would teach is to never forget syphilis.

The second case, which I wish to discuss, is that of a gastric tumor in a white man, aged fifty-one. Family history and past history negative, no operations. This patient was first seen in December, 1920, at which time he was complaining of frequent defecation with small, soft stools with marked rectal burning and pain, weakness and the loss of five or six pounds in the previous year. His history was otherwise completely negative. Examination of the head, throat and chest was negative; digital examination of the rectum negative. At this time no tumor mass was palpable in the abdomen but the upper right abdomen felt full. There were no pain points. The laboratory examinations showed normal urine, hemoglobin—55, red count 3,608,000, white count 12,600, and normal differential count, blood Wassermann negative, Sigmoidoscopic examination negative. Fluoroscopic examination of the gastro-intestinal tract showed a large filling defect on the greater curvature of the stomach in the pre-pyloric region. Nothing abnormal in the colon. This tumor occurring in a man, fifty-one years old, who was anemic, weak, with some loss of weight, suggested a malignancy, which we decided it to be. Patient returned to his family doctor, who gave him appropriate treatment for his anemia and attempted to regulate his diet to control the diarrhea. He was seen again at the end of the year, his condition practically unchanged. X-ray examination of the stomach showed practically the same filling defect, which apparently had not increased in

*Read before Section on Medicine, Illinois State Medical Society, Decatur, May 16, 1923.

size. No further loss in weight. Anemia about the same as it had been. Examination of the gastric contents showed complete achylia. Repeated examination of the feces for blood negative; also negative for ameba. We still considered the condition a malignant growth and operation was not considered, due to the weakened condition of the individual and the size of the growth. Patient was lost sight of then until October, 1922, when he returned in practically the same condition as he had been when seen a year previously. He had lost altogether not over twelve pounds in weight. Hemoglobin—40 per cent, red count 3,432,000, blood count otherwise negative, Wassernamn again neagtive. Stomach contents showed the absence of free hydrochloric acid, the presence of lactic acid, the presence of Oppler—Boas bacilli, undigested meat and vegetable fibres, a large amount of bacteria, no microscopical blood or pus. Occult blood test positive. Feces negative for blood and amèba, no pus. Fluoroscopic examination of the gastro-intestinal tract showed the same filling defect in the pre-pyloric region, slightly larger than at previous examination. At this time the possibility of a benign tumor was seriously considered with the idea of operation. This patient was used as a clinical case during the Tri-State Medical Meeting and was seen by Dr. John Deaver of Philadelphia, for the purpose of getting his opinion as to a differential diagnosis between benign and malignant gastric tumors. Dr. Deaver was familiar with the case history, saw the x-ray plates, made a physical examination, knew of the laboratory findings and examination of the stomach contents and said that it could be but one thing, namely, an advanced inoperable carcinoma. However, in spite of this it seemed to me that with the tumor, which we knew had been present for at least two years, which showed very slight or no growth, with no more evidence of cachexia or toxemia than was shown, and no more loss of weight than about twelve pounds, that a benign tumor might very readily be taken into consideration. This in spite of the laboratory findings, which were so characteristic of malignancy. One of the unusual features in this case is the absence of gastric distress through the entire time that this patient was under observation. We were never successful in controlling his diet. He liked good food and ate heartily of everything. His chief complaint was diarrhea and weakness. The diarrhea was more marked at night. I came to the conclusion that this must be true because of rapid emptying of the stomach of partially or completely undigested food and the elimination of the undigested food eaten during the day occurring at night. This diarrhea we never could successfully control. Taking everything into consideration, we made a diagnosis of benign gastric tumor and the patient was operated on November 16, 1922. A large tumor mass was found occupying the distal half of the stomach. The pyloric half of the stomach was resected and a gastro-jejunostomy done. The tumor was five by seven centimeters in diameter, occupying the anterior wall of the stomach on the greater curvature. The surface was covered with fairly normal looking muccus membrane and the consistency of the tumor was firm but not hard or nodular. Histological examination showed it to be a myoma.

In the January, 1922, number of *Surgery, Gynecology and Obstetrics,* Eusterman and Senty of the Mayo Clinic, presented a report of twenty-seven cases of benign tumors of the stomach. Quoting from their summary, they say that benign tumors of the stomach are rare and constitute only 13 per cent. of gastric tumors that come to operation. The actual proportion of benign new growths to malignant new growths or ulcerations is as one to two hundred. Myomata and fibromata constitute the largest group, gastric polyposis the most infrequent. About fifty per cent, of benign tumors are found in patients more than forty years of age. There is no characteristic syndrome and gastric chemism ranges from achylia to hyper-acidity with hypersecretion. The summation of evidence favors the diagnosis of gastric cancer. 4. The majority of tumors are situated in the region of the pylorus, the greater curvature, anterior and posterior walls. 5. The smaller tumors are practically symptomless unless situated at the orifices or unless multiple. 6. Common complications are recurring hemorrhage, which occurred in 37 per cent. and pyloric obstruction which occurred in 25 per cent. Palpable mass, food retention, or six hour barium retention is less frequent than in gastric cancer. 7. Often patients with benign gastric tumors are refused operation because the condition is regarded as malignant and inoperable. The true nature of the lesion is discovered

only when the patients insist on operation. 8. The surgical end-results are excellent.

The outstanding diagnostic points in our case, that this tumor was a benign tumor, were the presence of a mass in the stomach extending over a period of two years with slight or no evidence of growth, weakness without marked loss of weight, marked secondary anemia without real cachexia and a digestive disturbance characterized by diarrhea with no infectious or mechanical conditions demonstrable in the colon to account for it.

The next case is presented not so much because of the diagnostic problems involved as to illustrate the presence and rather unusual complication of an infrequently incurred type of tumor in an unusual location. This patient was a white female, aged fifty. Family and past history negative. Menstrual history negative. Marital history—eleven pregancies, nine living children, two dead. At the time she was seen, she was complaining of severe pain in the lower right abdomen. The onset had been two weeks previously, characterized by nausea and slight pain in the lower right abdomen. This pain had continued and become quite constant and increasingly severe, characterized by sharp paroxysms of cramping pain, four to five stools containing mucus, at times blood stained. Examination of the abdomen revealed an oblong mass lying obliquely in the left lower quadrant, fixed and firm. Pelvic examination showed the uterus to be of normal size, freely moved, apparently not connected with the tumor mass in the left lower abdomen, no distension or tympanites, temperature and pulse normal, laboratory examinations negative. Because of the patient's age, a diagnosis of probable malignancy causing a partial obstruction was made. The condition was considered critical enough to perform an immediate operation. When the abdomen was opened, the colon was seen to be considerably enlarged. The mass in the left lower abdomen was dislodged and proved to be the enlarged colon. When the entire mass was delivered it was seen to be an intussusception. The intussusception was reduced by pressure upon the distal point. After the reduction was effected a round solid tumor, seemingly about two inches in diameter, was felt inside the cecum. Ileum and ascending colon were clamped and the cecum opened in the longitudinal line. The tumor was delivered and was found attached by a pedicle to the outer side of the cecum. Mucous membrane was cut around the pedicle and the pedicle ligated and the tumor cut off. The tumor felt firm, very much like a small fibroid and was easily enucleated. It was quite evident that the tumor had been the cause of the intussusception. Histological examination of the tumor proved it to be a lipoma. This case was reported merely for the rather unusual type of tumor occurring in ths location, within the lumen of the cecum and causing the complication of intussusception.

The following case is that of a white male, aged thirty-nine. Family history negative. Previous history negative with the exception of attacks of tonsillitis during early life and an appendectomy performed in July, 1922. His chief complaint was attacks of severe cramping pain in the left side of his abdomen and pelvis, radiating into the left testicle and the head of the penis. The first attack of this kind occurred in June, 1922, and lasted intermittently for eight days. During this time he was nauseated and vomited frequently, had increased and burning urination with temperature up to 102°. In July, a month following this attack, a laparotomy was performed in another city at which time the appendix was removed and he was told that he had a dermoid cyst in the lower abdomen, which was inoperable. From the time of operation until December, 1922, he had no further attacks of pain. Since that time pain had been present more or less all of the time. His gastro-intestinal history showed that for fifteen years he had been subject to attacks of nausea and vomiting with severe abdominal pain occurring in the mid abdomen and lasting two or three hours, cramp-like in character, and occurring almost immediately after meals. The attacks occurred two or three times a year. During these attacks he would have from six to eight fluid stools a day, no blood or mucus in the stools; with temperature of two to three degrees. In the interval between attacks, his digestion was good, there was no marked bowel disturbance with the exception of an increasing constipation. There had been no loss of weight and strength was good. History otherwise negative. On examination we found an extremely well nourished and muscular man, extremely tender on pressure over the mid lower abdomen just above the pubic bone. Pressure over this point produced a shooting pain down to

the head of the penis. He was not tender over any other portion of the abdomen or over either costo-vertebral angle. There were no palpable masses. His temperature at the time he was under observation ranged from 99 to 100°, pulse between 80 and 90. Urine showed no albumin or sugar, a moderate amount of hyaline casts, and one or two red blood cells to a field, no pus. Hemoglogin 90, red count 4,896,000, white count 21,200, differential 72 polys., 14 lymphs, 4 per cent. large mono. Wassermann negative. Examination of the head and throat negative. Heart and lungs normal. Blood pressure 118 over 76. Fluoroscopic examination of the colon, using a barium enema, showed the rectum and lower part of the sigmoid filled completely but the barium mixture did not rise above the lower part of the sigmoid. As pressure was increased in the rectum, he complained very bitterly of pain in the left side of the abdomen, this pain being identical to the type of pain which he had during his attacks, and radiated to the penis and testicle. At no time were we able to force the barium mixture above the lower part of the signoid. Fluoroscopic examination of the chest and stomach was negative. The colon, by barium meal, showed no abnormalities with the exception of a marked constriction of the lumen of the sigmoid in its lower portion. X-ray examination of the abdomen for dermoid cyst showed no densities, which might be interpreted as due to bone or teeth. X-ray examination of the genito-urinary tract negative. From his history of severe cramping pain in the left lower abdomen radiating to the testicle and penis with freqeunt and painful urination, the first thing suggested was some kidney or ureter disturbance. The practically negative urine and negative examination of the genita-urinary tract by x-ray, however, we felt ruled this out. On going further back into his history and learning of his attacks of pain similar in character to the pain he had at the time of examination, which had occurred off and on over a period of fifteen years with diarrhea and temperature, the possibility of some recurring infectious condition in the gastro-intestinal tract seemed more probable. His increasing constipation with x-ray evidence of partial obstruction of the sigmoid led us to believe that the most likely condition was some process of inflammatory nature involving the sigmoid. As the sigmoid and descending colon are the most frequent location for diverticula, diverticulitis was considered the most probable condition. There was a question as to whether he had had an inverted diverticulum with recurring attacks of inflammation, producing swelling of the mucous membrane and partial obstruction or possibly an intussusception or a ruptured diverticulum producing repeated attacks of peri-sigmoiditis which had involved the ureter explaining the radiating pain to the testicle and penis. A diagnosis of diverticulitis was made and operation performed December 29, 1922. At operation a mass was found in the central lower pelvis that was the thickened, enlarged lower end of the sigmoid. Approximately five inches of the lower portion of the sigmoid including the tumor was removed and an end to end anastomosis done. The removed piece of sigmoid was five inches long and the mesenteric surface smooth, covered with fat and showed no abnormalities. The remainder of the wall was very much thickened with overlapping layers of a fairly firm, reddish-white smooth tissue which proved to be fat and connective tissue. This thickness of the gut wall had gradually encroached upon the lumen, producing a partial obstruction. Mucous membrane was normal throughout the entire piece with the exception of one area, one-half centimeter in diameter, the site of a diverticulum which had ruptured and produced a tiny sinus through the bowel wall. Very evidently from time to time this sinus would open, discharging a small amount of the bowel content, producing a perisigmoiditis with the consequent development of a gradually increasing inflammatory tumor.

DISCUSSION

DR. MILTON E. ROSE, Decatur: Of course we all know that malignant tumors of the stomach and bowel are more frequent than the benign, as Dr. Brown brought out. There is one point perhaps which Dr. Brown did not emphasize sufficiently. That is, in distinguishing between malignant and benign tumors, the presence of blood in the stool.

I believe the average doctor does not make as many stool examinations as he should. The more stool examinations I make, the more I want to make and the more I learn by making them. In stomach and bowel work I find I am not satisfied unless I have examined at least five stools in every case.

It is the same with blood cultures. One negative blood culture is not conclusive. One negative stool examination doesn't mean a thing. If one gets into the habit of studying the stool in gastro-intestinal work, much information will be gained.

Carcinomata bleed, as we know, and, therefore, we

expect to find blood in the stool. Of course there are exceptions to this rule. Benign tumors, as a rule, do not bleed and, therefore, the stool will not contain blood.

One point which should be mentioned, however, in examining stools for blood, is to be sure the patient, when he brushes his teeth, does not make them bleed. Blood swallowed in this way will show up in the stool. Be sure that he rinses his mouth well after brushing his teeth. The patient should be on a meat-free diet and he should be questioned whether or not be has had a recent nose bleed.

The case of Dr. Brown's with the large benign tumor at the pylorus is a very interesting and instructive one. I recently had a similar case in a man of 35 years. He presented the typical picture of complete pyloric obstruction. There was an absence of CH1 in the stomach contents and much occult blood found in every stool examined. The x-ray showed a large filling defect at the pylorus involving mainly the greater curvature. The Wassermann was negative. At operation a large tumor mass (size of an orange) was found in the lower end of the stomach, closing off the pylorus, and it seemed quite certain that it was a carcinoma. A posterior gastro-enterostomy was made to relieve the obstruction. The patient made a good recovery and he improved rapidly. A large gland removed at operation did not show malignant changes. Two more Wassermanns were made and found negative. In spite of these findings, he was given weekly injections of neoarsphenamine with continued improvement. Today he is quite well, and it seems that if his tumor were a cancer, he would not be alive at this time.

The barium enema is another valuable procedure to help us arrive at a correct diagnosis in gastro-intestinal work. The additional expense it incurs and the necessity of referring our patient to "another specialist" are obstacles which often stand in our way. If it cannot be employed routinely, it should be used in all more or less obscure cases, as the finding of constant filling defects or abnormal contractions of the colon will often clear up the diagnosis.

DR. DAMON A. BROWN (Closing): Uesterman and Senty had thirty-seven per cent. of benign tumors showing hemorrhage. It is true the malignant tumor will show hemorrhage in a much larger percentage than the benign. That may be a different diagnostic point.

COULDN'T FOOL KING MILAN.

King Milan of Servia once went to the hotel of a distinguished lady who was giving a bazaar for the benefit of the poor children of Paris. As soon as the king appeared upon the scene she advanced toward him with a splendid silver salver in her hands on which was beautifully emblazoned the family arms. On it lay a pretty little bunch of violets. "How much, madam?" asked the king. "Twenty-four lois, sir," was her soft response. Milan paid her the sum she had asked, with a courteous bow, took the salver from her hands, placed the bouquet in his buttonhole and walked off with the tray under his arm.—New York Commercial Advertiser.

MYOCARDIAL DEFICIENCY FROM A SURGICAL STANDPOINT*

J. L. YATES, M. D., M. F. ROGERS, M. D., AND R. E. MORTER, M. D.

MILWAUKEE, WIS.

A more general and keener appreciation of the moral and economic values of individual effort is one of the most beneficent results of war experiences. Thus the realization has come earlier that development, conservation and rehabilitation of function are the objectives of medicine. Consequently, the chief therapeutic aim is to extend the period of most productive activity, which frequently is after fifty, rather than merely to prolong life.

A notion, popularized by Osler, that productivity terminates in the forties, has been unfortunately influential. Much of the world's best work has been, is being done and will the more be done by those well past the age, set in jest by Sir William, for chloroform euthanasia. We have too long accepted a dictum that a man is as old as his arteries without considering the more significant fact, that age itself is of little moment. The real issue is total accomplishment, which is commensurate with the length and character of life and is determined largely by the functional capacity to heart muscle.

Vital statistics indicate to a limited degree the sinister effects of myocardial deficency upon modern life. Diseases of the heart have become one of the commonest recognized causes of death and at times, in industrial communities particularly, they are the commonest. Even granting more than a full quata of statistical errors, the numbers registered are too low; first, because they are largely based upon valvular lesions[1], and second, because of the many deaths attributed for example to infections, injuries, childbirth and operations wherein the actual determining lethal factor had been pre-existing myocardial defects with consequent reduction in reserve myocardial energy—a narrowed margin of safety.

Innumerable individuals have demonstrated the capability of relatively healthy heart muscle to cope successfully with handicaps such as valve defects or long continued arterial hypertension, and its inability, if injured, to deliver the heart power required for normal existence even when

*Read before the Tri-State Medical Society, Nov. 2, 1922. (Cuts by Courtesy of Wisconsin Medical Journal.)

the balance of the circulatory mechanism was virtually normal. In short, individuals are born with a definite potentiality for myocardial energy which may be developed and maintained at its maximum or may be dissipated. Lesser demands of life require an expenditure of currency energy; greater demands, occasioned by unusual mental or physical effort and by disease, call for reserve or potential energy. The amount of available potential energy measures ability to live beyond the limitations of the sedentary or the bedridden. Manifestly the largest supply of heart muscle energy, the widest margin of safety, is invaluable.

The surest way to practical solutions of the many problems inherent in the prevention and relief of cardiac malfunction is to recognize nature's methods of adaptation to handicaps. Thus alone is it possible to develop measures that will secure the least unfavorable working conditions for the heart which are far superior to attempts at artificial control of the heart's action, usually harmful and often futile, but supposed to meet disadvantages to which the circulation is already reacting naturally and as effectively as circumstances permit.

Presumably, the circulatory apparatus has been developed to deliver an excess of blood and lymph in the most economic manner, i. e., with the least expenditure of energy and with the largest opportunity for recuperation of the energy expended. Under normal conditions the requisite pressures are maintained by that co-ordination of the force and rate of heart muscle contractions best suited to the individual. Various factors—psychic, nervous inhibition and acceleration, mechanical, thermal, hydraulic and chemical—all enter into this co-ordination. The tonicity of the chambers of the heart measures the functional capacity of each[2], and to a degree, that of the entire organ somewhat as a weak link determines a chain's strength.

Under abnormal conditions the co-ordination of force and rate of contractions is less favorable though probably the most economic possible at that time for that individual. No matter which controlling factor or factors may be responsible for disintegrating the circulatory apparatus, there is this effect, a relative increase in expenditure of energy with a relative reduction in recuperation, and, in consequence, an expenditure of reserve energy. Whether the process is protracted and hypertrophy develops, or whether there is not time for this compensatory adjustment, if the provocation persists, the total available energy becomes inadequate to provide the contraction power required to continue the most favorable co-ordination of force and rate. Then, in order to maintain blood pressure compatible with life, the rate of contraction increases to supply the deficit of force. Thus is initiated a progressive tachycardia which, unchecked, ends in cardiac exhaustion.

Cardiac competence depends upon myocardial ability to receive, to transmit and to respond to stimuli so that blood pressures, adequate to supply the needs of the body, are maintained by expenditure and replacement of currency energy without reduction in reserve energy. The basis of functional competence is anatomic integrity.

The causes of cardiac incompetence or myocardial deficiency are heart muscle lesions which vary from the earliest phase of degeneration, possibly cloudy swelling, to necrosis and fibrosis. Their deleterious effects upon function are commensurate with the acuteness and diffuseness of the process, or, when focalized, with the significance of the role played in cardiac function by the part affected. Acute lesions are more dangerous than chronic because adaptation is less possible. They are most dangerous when added to pre-existing chronic changes such as hypertrophy, fibrosis or atonicity.

Influences inimical to normal heart muscle structure are overactivity, inadequate nourishment and intoxication. They frequently operate in conjunction and are likely to initiate or aggravate progressive anatomic lesions and therefore to promote increasing cardiac handicaps.

Myocardial deficiency due to overexertion or under-rest is proportionate to the nature and duration of conditions provoking hypernormal myocardial metabolism and is commensurate primarily with the reduction in reserve energy inevitable with hypertrophy, and secondarly to restricted currency energy or actual power, concommitant with degeneration and atonicity. Fatigue injuries to heart muscle result from (a) occupations requiring an expenditure of energy in excess of that recuperated during rest periods which includes athletic overactivities; (b) fevers; (c) hyperthyroidism; (d) psychoneuroses; (e) intrinsic circulatory handicaps (valve lesions, pericarditis with effusion or with adhesions, and arterial hypertension); (f) extrinsic circulatory

handicaps largely confined to the lesser circulation and produced by emphysema, fibrosis[3] consolidation and tumors of the lung, by pleural or mediastinal exudates or tumors[4], or by parietal deformities especially of the diaphragm. In brief, factors which reduce vital capacity offer obstruction to the pulmonary circulation or vice versa[5], and in turn overburden the right heart which often, indeed far more often than is accepted, becomes the weak link in the circulatory chain[6].

Under-nourishment, particularly dehydration of heart muscle, may be focal and due to restricted coronary circulation or result from deficiencies in the blood delivered as in anemia, in starvation inclusive of rigid diets used therapeutically, or from faulty metabolism. Early in the more acute phases of cardiac crises there is adequate nourishment and water in the blood for normal heart muscle[7]. Later when pressures have fallen so that the velocity of the blood stream is reduced and the blood actually in circulation has become overconcentrated and its volume lessened[8], it is improbable that injured muscle can obtain adequate fuel. Serious effects of myocardial under-nourishment are frequently seen when acute myocardial injuries, e. g., narcotic intoxication and recent intense infections such as tonsillitis, are added to a chronic form due to prolonged somatic under-nourishment or to more acute forms resulting from over-exertion and dehydration. The latter was much in evidence in soldiers wounded after continued marching or fighting in hot weather.

Heart muscle intoxicants are bacterial (venoms), the products of deranged metabolism and drugs. Toxines resulting from acute infections are likely to cause less permanent damage to heart muscle than those coming from chronic focal infections, e. g., teeth, tonsils, sinuses, otitis media, intestinal stasis, etc. The most serious seem to be those located in the bile tract, particularly when associated with jaundice.

Tissue degenerations with and without the concomitant action of bacteria, such as occur in intestinal obstruction and infarctions, skin burns, crushing injuries to muscle, the abuse of tourniquets and necroses in tumors, liberate substances into the circulation that are viciously injurious. More recently another harmful influence has been developed in X-ray and radium therapy. All practitioners of medicine are directly concerned in the effect of drugs. Bunting[9] found that the narcotics—opium, chloroform, ether and nitrous oxide—all produce acute degeneration of heart muscle. Anesthesia without operation sufficed to cause death in animals having chronic myocarditis. To these may be added alcohol, tobacco and many of the coal tar products. It is quite possible that the effect of injuries inflicted by intoxicants through interference with intracellular metabolism are twofold—reductions both in contractibility and in conductivity.

Nowhere in medicine is prevention of disease more desirable than in heart muscle, nowhere is it as certain to exceed the value of cure by the proverbial sixteenfold. A shortcoming of medical specialization has been a narrowing influence upon specialists. Remote effects of local disease, early indications for treatment, and the ultimate good and evil results thereof have been unrecognized or have been considered of too little moment compared to the immediate comfort and satisfaction of patients as well as those interested in them.

The preceding summary of the causes and effects of myocardial injuries suffices to indicate the opportunities and responsibilities of all actively interested in medicine. Likewise it is evident that those practicing surgical specialties are particularly obligated to employ methods likely to afford protection or relief and unlikely to inflict or to increase injury.

Due consideration of the heart muscle factor in disease and in treatment automatically classifies surgical patients in four groups: (a) those having intact hearts, (b) those having recoverable myocardial lesions if sources of irritation are properly eliminated, (c) those suffering from lesions whose progress can be arrested or retarded, and (d) those demanding surgical relief from pain and distress in the face of cardiac handicaps that preclude usual operative methods.

Reduced to simple terms, the requirements to be met in practice are two—diagnostic means to determine the presence and degree of myocardial injuries and a simplification of preoperative, operative and postoperative methods designed to safeguard the more severe lesions and to be at least harmless for the less severe.

Satisfactorily accurate diagnoses of degrees of cardiac incompetence are as yet impossible because there is no means of determining that most important factor, the amount of reserve power. The best index of cardiac ability to withstand

the extraordinary strains of narcosis and operation is its capability to respond naturally to slightly increased physical exertion, supplemented by careful consideration of history and of physical findings.

Recognition of valve lesions or of myocarditis in the general acceptance of that term is of less consequence than an appreciation of probable or possible reduction in power which may be extensive and yet independent of lesions now recognized by necropsy pathologists.

History of one or more of the etiologic factors in myocardial injury disclosed by age, habits, occupation and illness is significant but less so than unwarranted cardiac dyspnoea and tachycardia with exertion and edema thereafter.

Cardiac enlargement positively indicates myocardial deficiency but not its degree. Hypertrophy is not a sign of seriously reduced power. Atonicity and dilatation are proofs of a dangerous reduction. Hypertrophy and dilatation may coexist in variable proportions. On the other hand

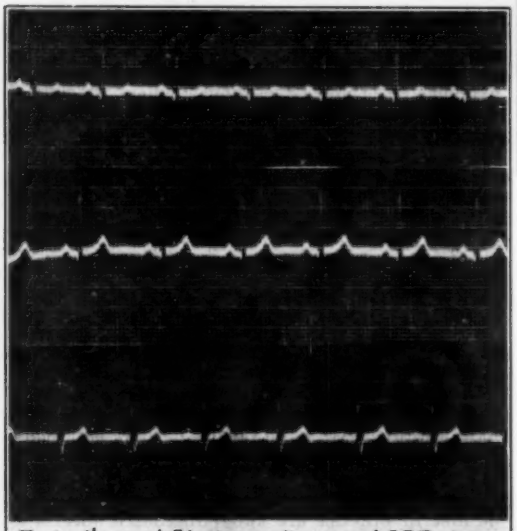

Fig. 1. Normal Electrocardiogram. I-II-III are the three leads. P represents auricular activity. P-R does not exceed .16 sec. Q-R-S-T represents ventricular activity. R reveals no notching. Q-S does not exceed .08 sec.

a normal-sized heart may be atonic and on the verge of dilatation, if the damage is recent and severe, and slight additional stress would induce serious incompetence.

Modification of heart sounds, especially muffling of the first sound at apex when not attributable to impaired conduction through the overlying tissues, is very suggestive, as is gallop rhythm.

Functional tests are more reliable. A delayed rise in blood pressure response to exercise indicates undue myocardial fatigue. Estimations of both blood pressure and pulse rate reactions to

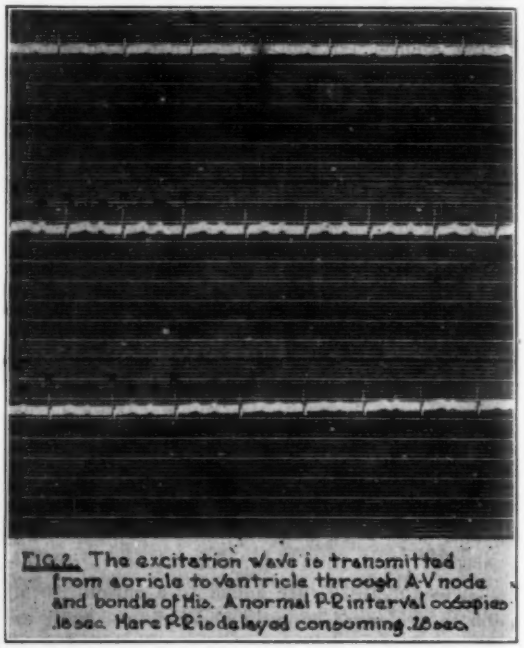

Fig. 2. The excitation wave is transmitted from auricle to ventricle through A-V node and bundle of His. A normal P-R interval occupies .16 sec. Here P-R is delayed consuming .28 sec.

moderate exertion are more dependable in giving clues to the force and rate of contractions and adaptive capability, than observations of variations only in pulse rate.

The chief value of electrocardiography (Fig. 1) lies in the discovery of lesions affecting special conducting structures of the heart, the His bundle and its branches, which pass through the ventricular myocardia and terminate in the ventricular subendocardia. The tracings also may indicate myocardial as well as conduction tissue lesions, but, on the other hand, lesions in silent areas away from conducting elements may not be revealed.

One of two important electrocardiographic abnormalites may be encountered—a prolongation of the "P-R" interval, i. e., an increased "A-V" conduction time—when not of vagal origin (Fig. 2), or a bizarre notched "R" complex with increased "Q-S" interval (Figs. 3, A and B), i. e., prolonged intraventricular conduction time, the excitation wave taking an abnormal course

through the terminal (Purkinje) fibers. These evidences of disturbed conduction may be due to transient (recoverable) or permanent lesions, and are therefore indicative of both temporary and persistent myodegenerations. They can be produced experimentally with morphia and asphyxia,[10] a confirmation of the evidence cited above[9] that narcosis produces myocardial injury which is demonstrable both in altered structure and function.

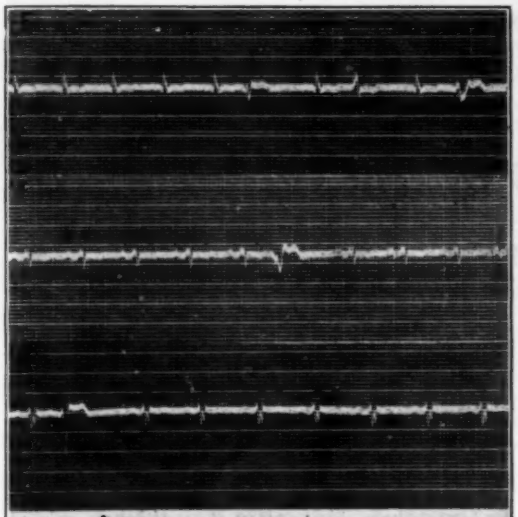

FIG. 3A. Electrocardiogram revealing notched R complex in all leads. Q-S interval at outer limits of normal. Note isolated ventricular premature contractions.

Evidently, if the welfare of each patient is to be considered, surgeons must develop methods of conducting operations that will minimize immediate danger of death and also liability to initiate or to aggravate permanent and as a rule progressive myocardial injuries. Thus alone can morbid states incompatible with heart muscle welfare be promptly and safely eliminated.

Fundamentally, this means controlling tendencies to increasing tachycardia and arterial hypotension, and at once suggests the methods, namely, to keep the heart rate low to prevent exhaustion and to provide an abundant volume of good blood in circulation to assure the conditions prerequisite for myocardial economy.

Tachycardia of the serious type may begin during operation but is more likely to start from several hours up to three days thereafter (Figs. 4, 5, 6, 7, 8, 9). It is usually preceded by blood pressure changes of which variations in pulse pressures are perhaps the most ominous (Figs. 10-A and 10-B). Deaths thus occasioned are attributed to shock, to postoperative exhaustion,

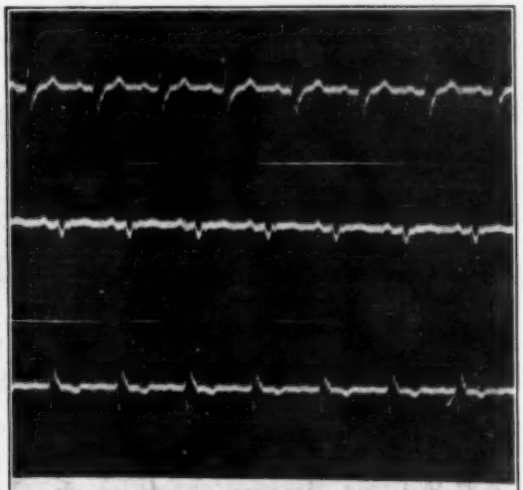

FIG. 3B. Notched R complex with delayed Q-S interval present in all three leads.

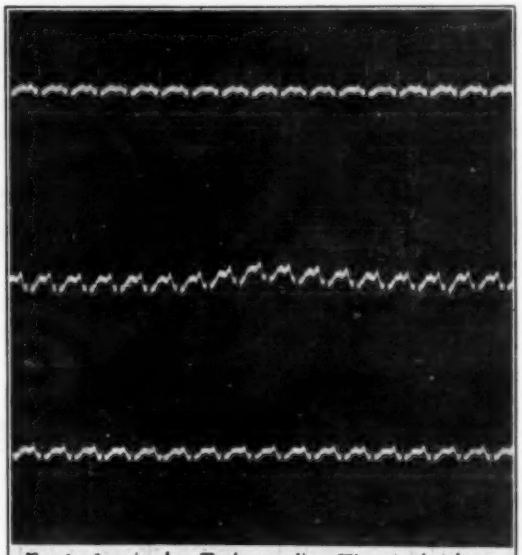

FIG. 4. Auricular Tachycardia. The ventricles respond to each auricular impulse, both chambers contracting at the rate of 200 per minute. Thyroidectomy Exophthalmic Goitre

or more commonly to cardiac dilatation,[11] and usually ascribed by operators to preoperative procrastination, the hand of God or anything but the truth, a failure to protect handicapped heart muscle.

Whenever tachycardias and arrhythmias arise subsequent to operation, electrocardiograms should be promptly secured, the nature of the disturbance determined and intelligent therapy immediately instituted. Levine[11] reported studies upon nine people who suffered from cardiac complications, commonly called "postoperative acute dilatation of the heart." Electrocardiographic examination showed each patient to have had an abnormal aricular mechanism. Three had paroxysmal auricular tachycardia; four had paroxysmal auricular fibrillation; and two had paroxysmal auricular flutter. Direct vagal or

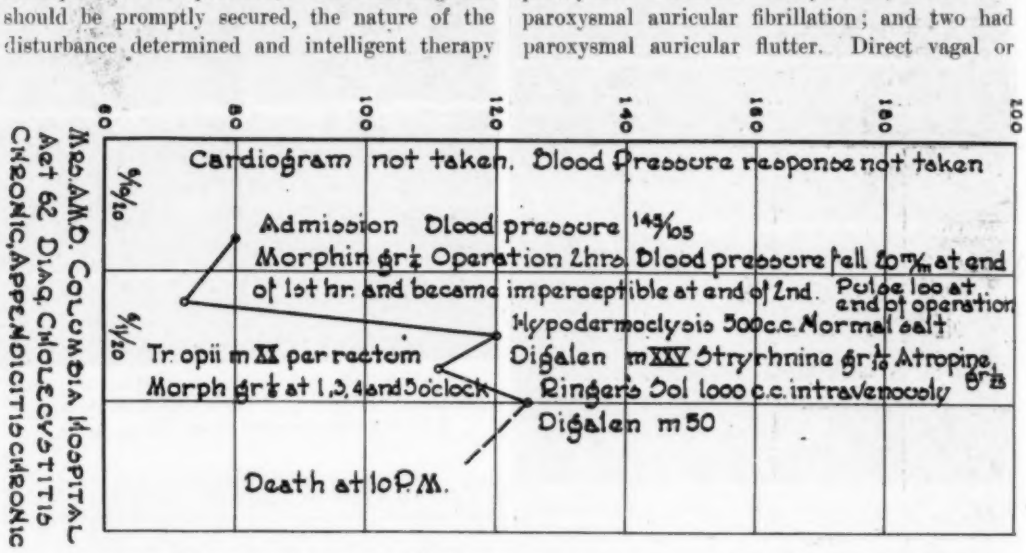
Mrs. A.M.D. Columbia Hospital
Act 62 Diag. Cholecystitis
Chronic, Appendicitis Chronic
Cardiogram not taken. Blood Pressure response not taken
Admission Blood pressure 145/105
Morphin gr ¼ Operation 2 hrs. Blood pressure fell to 70 m/m at end
of 1st hr. and became imperceptible at end of 2nd. Pulse 100 at end of operation
Hypodermoclysis 500 c.c. Normal salt
Tr. opii m XX per rectum
Morph gr ¼ at 1, 2, 3, 4 and 5 o'clock
Digalen m XXV Strychnine gr 1/30 Atropine gr 1/75
Ringer's Sol 1000 c.c. intravenously
Digalen m 50
Death at 10 P.M.

Fig. 5: Myocardial degeneration was established by history. Recent recovery from phthisis. Gas anesthesia was selected and was unsatisfactory. Local or combined anesthesia with free and early administration of glucose and digitalis intravenously might well have assured recovery.

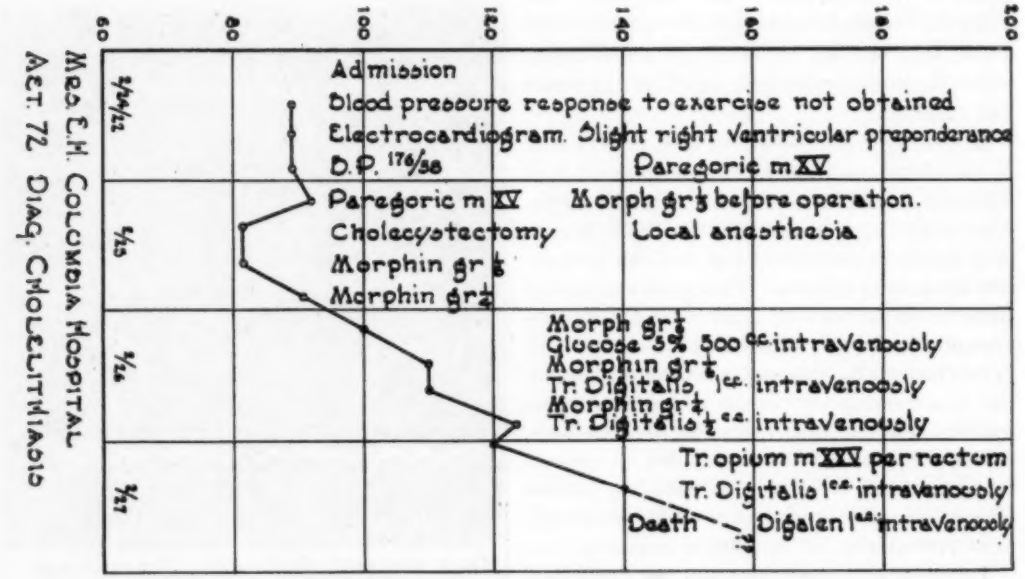
Mrs. E.M. Columbia Hospital
Aet. 72 Diag. Cholelithiasis
Admission
Blood pressure response to exercise not obtained
Electrocardiogram. Slight right ventricular preponderance
B.P. 176/58
Paregoric m XV
Paregoric m XV Morph gr ⅓ before operation.
Cholecystectomy Local anesthesia
Morphin gr ¼
Morphin gr ¼
Morph gr ¼
Glucose 5% 500 cc intravenously
Morphin gr ¼
Tr. Digitalis 1 cc. intravenously
Morphin gr ¼
Tr. Digitalis ½ c.c. intravenously
Tr. opium m XXV per rectum
Tr. Digitalis 1 c.c. intravenously
Death
Digalen 1 c.c. intravenously

Fig. 6: Myocardial degeneration was established by history. If glucose and digitalis had been given prophylactically the first day, the tachycardia might well have been prevented even though the patient was non-cooperative and would not indulge in mental or physical inactivity.

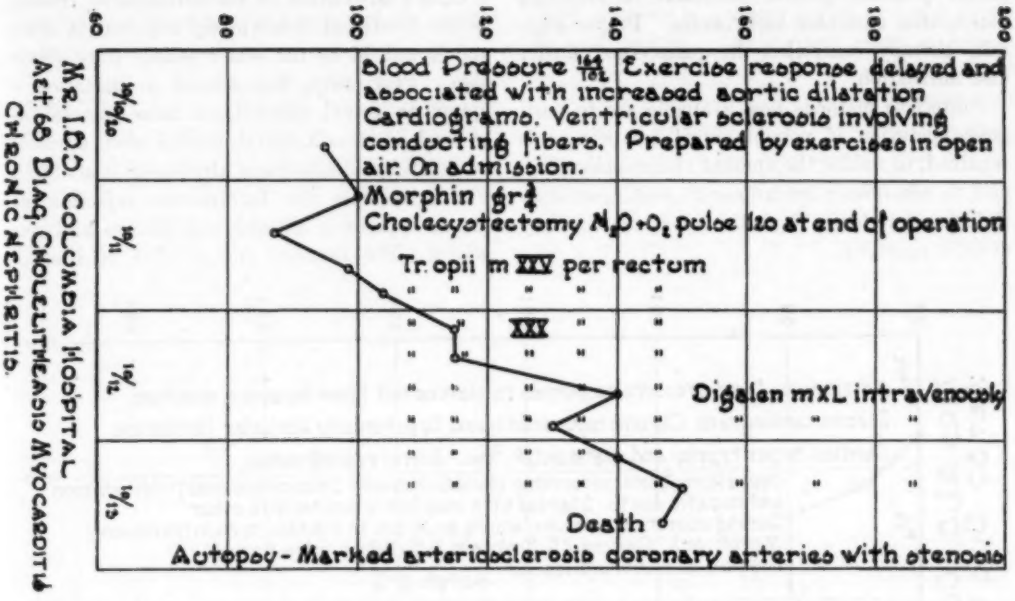

Fig. 7: Serious myocardial injury was recognized. Combined anesthesia and free administration of hypertonic glucose might have permitted immediate recovery. Necropsy showed long-continued existence to have been impossible.

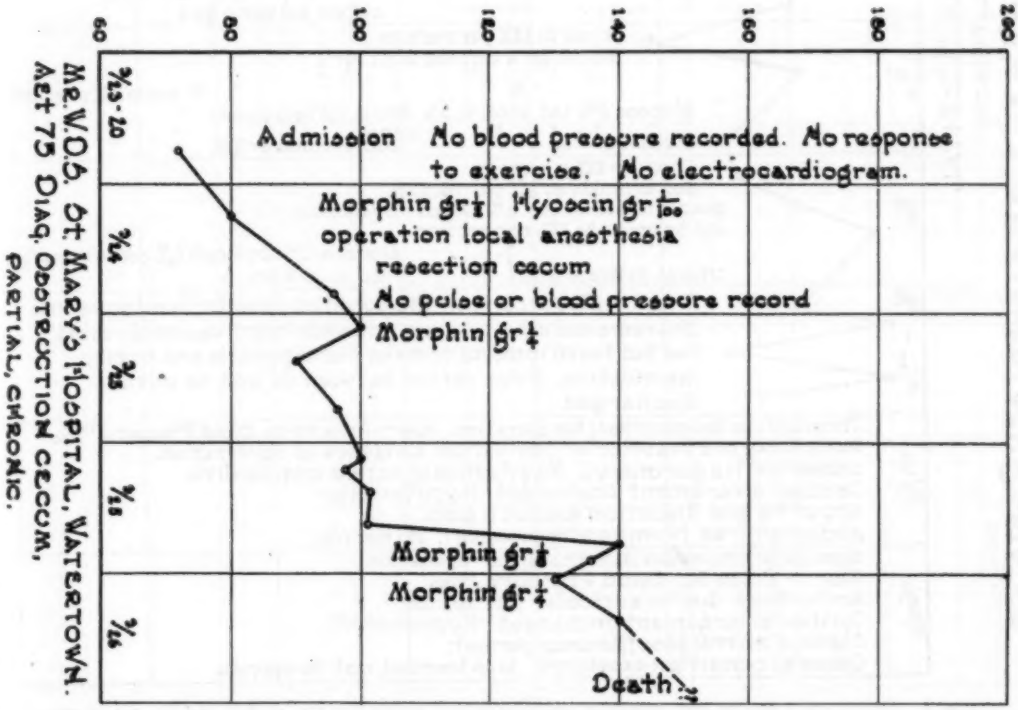

Fig. 8: Myocardial degeneration was established by history. This patient would have been better served and might have recovered if less morphin had been used and had glucose and digitalis been given after operation and repeated the next day.

ocular pressure proved successful in arresting paroxysmal auricular tachycardia. Proper digitalis therapy controlled the paroxysmal flutter and fibrillation.

Protective methods now available are to postpone operation if possible until competence is regained, to reduce the amount of narcotics given and to administer intravenously and generously fluids and at times digitalis *before* there is any evident necessity.

Crile's advocation of the principle of treating before treatment is obviously required is sound and is upheld by the better results thus obtainable. Practically, this entails a limitation of opium to actual necessity, a more general use of local anesthesia, supplemented when advisable by skillfully administered nitrous oxide analgesia. Fluids suitable for intravenous injection are blood, hypertonic glucose and glucose and gum acacia. The amounts and rapidity of adminis-

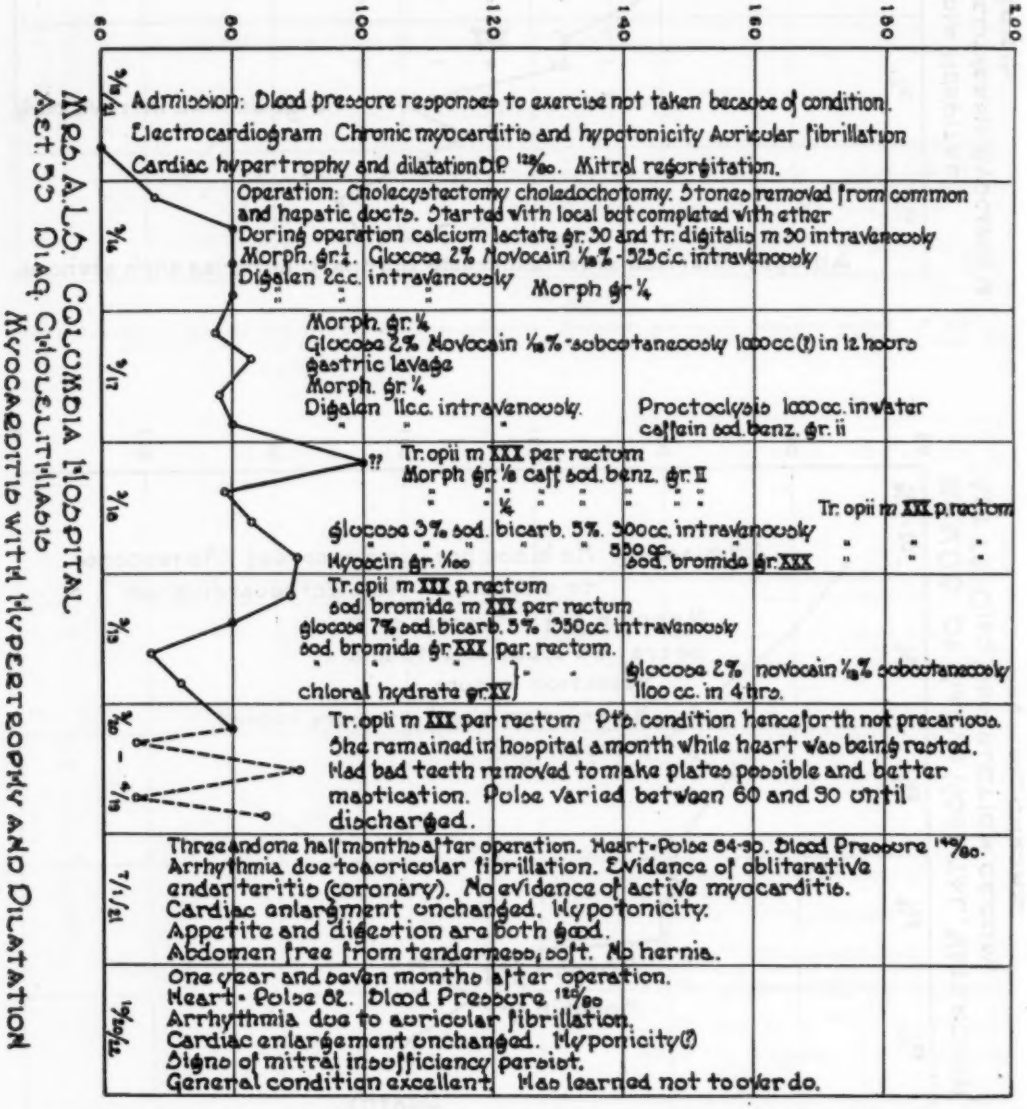
Mrs. A.L.D. Columbia Hospital
Age 53 Diag. Cholelithiasis
Myocarditis with Hypertrophy and Dilatation
60
80
100
120
140
160
180
200
Admission: Blood pressure responses to exercise not taken because of condition.
Electrocardiogram Chronic myocarditis and hypotonicity Auricular fibrillation
Cardiac hypertrophy and dilatation B.P. 125/80. Mitral regurgitation.
Operation: Cholecystectomy choledochotomy. Stones removed from common and hepatic ducts. Started with local but completed with ether
During operation calcium lactate gr. 30 and tr. digitalis m 30 intravenously
Morph. gr. ¼. Glucose 2% Novocain 1/2% - 525 c.c. intravenously
Digalen 2 c.c. intravenously Morph gr. ¼
Morph. gr. ¼
Glucose 2% Novocain 1/2% - subcutaneously 1000 cc (?) in 12 hours
Gastric lavage
Morph. gr. ¼
Digalen 1½ c.c. intravenously.
Proctoclysis 1000 cc. in water
caffein sod. benz. gr. ii
Tr. opii m XXX per rectum
Morph gr. ⅛ caff sod. benz. gr. II
" " ¼ " " "
Tr. opii m XXX p. rectum
glucose 5% sod. bicarb. 5% 300 cc. intravenously
Hyoscin gr. 1/100
350 cc.
sod. bromide gr. XXX
Tr. opii m XXX p. rectum
sod. bromide m XXX per rectum
glucose 7% sod. bicarb. 5% 350 cc. intravenously
sod. bromide gr. XXX per rectum.
glucose 2% novocain 1/2% subcutaneously
chloral hydrate gr. XV
1100 cc. in 4 hrs.
Tr. opii m XXX per rectum Pt's condition henceforth not precarious.
She remained in hospital a month while heart was being rested.
Had bad teeth removed to make plates possible and better
mastication. Pulse varied between 60 and 90 until
discharged.
Three and one half months after operation. Heart - Pulse 84 sp. Blood Pressure 145/90.
Arrhythmia due to auricular fibrillation. Evidence of obliterative
endarteritis (coronary). No evidence of active myocarditis.
Cardiac enlargement unchanged. Hypotonicity.
Appetite and digestion are both good.
Abdomen free from tenderness, soft. No hernia.
One year and seven months after operation.
Heart - Pulse 82. Blood Pressure 125/80
Arrhythmia due to auricular fibrillation.
Cardiac enlargement unchanged. Hyponicity(?)
Signs of mitral insufficiency persist.
General condition excellent. Has learned not to over do.

Fig. 9: Patient was known to have myocardial handicaps of most serious type that virtually prohibits general narcosis. General anesthesia had to be used while removing stones from hepatic ducts. Fatal tachycardia was prevented by giving glucose and digalen intravenously promptly, during operation, and repeatedly thereafter. She has been made comfortable and contented. Even if cardiac disability has not been reduced, it has not progressed.

tration are determined by circumstances which also indicate the need of digitalis and the amount to be given.*

*Note: Clinical observations, confirmed by Cannon's experimental evidence[13], have established two significant facts. Patients suffering from diseases causing severe myocardial injuries, e. g., acute intestinal obstruction, intertinal perforation in typhoid fever or intense jaundice, are subjected to less danger if operated upon under local anesthesia, and when in shock, which is synonymous with myocardial fatigue, they are the more capable of withstanding general narcosis if nitrous oxide and oxygen are administered and in proportion not exceeding three (nitrous oxide) to one (oxygen).

Acceptance of a sound principle that whatever means are beneficial to handicapped patients will offer greater protection to the more robust patients simultaneously determines the safest form of anesthesia. Contraindications to the lse of chloroform more than suffice to make its administration unjustifiable. Ether possesses the virtue of being least immediately dangerous in the hands of an anesthetist of average ability because it cannot as a rule be given too rapidly (over concentration) and cyanosis (asphyxia) is easily controlled. Nitrous oxide, when given skillfully, is the less unpleasant to take, the more evanescent and causes less ultimate injury. But, as a rule, gas is improperly administered. Induction is too rapid and the subsequent dosage so uneven (often because the operator fails to co-operate with the anesthetist) that there are sudden increments in concentration often with rapid additions of ether vapor. Intervals of cyanosis, under these conditions, are quite inevitable. Thus the most serious of anesthetic injuries, over concentration of narcotic and asphyxia, are inflicted repeatedly, and are harmful to normal and extremely hazardous for handicapped hearts.

The use and not abuse of local anesthesia requires special effort and training in methods essential to success in which the welfare of the patient and not the comfort of the surgeon is fundamental. Farr has demonstrated that it can be employed satisfactorily in most major surgery. When it is wiser to supplement local anesthesia with ether or nitrous oxide and oxygen analgesia, the local anesthetic and local anesthesia methods should be used as carefully as if they alone were available. The object is to reduce primarily the intensity of narcosis and secondarily the total amount given. The duration of administration is of far less moment. A combination of local anesthesia with inhalation analgesia makes possible a reduction of more than one-half in both amount and concentration of general narcosis. In brief, the less the concentration and the greater the evanescence of the narcotic, the better for heart muscle. However, other factors must be considered, particularly the psychic stability of patients. No rigid scheme can be adopted. This applies particularly to the use of opium. It alone can produce fatal tachycardia (Fig. 8) when given too generously, and, if withheld when its use is indicated, the results may be quite as disastrous (Fig. 11 & 12). Generally,

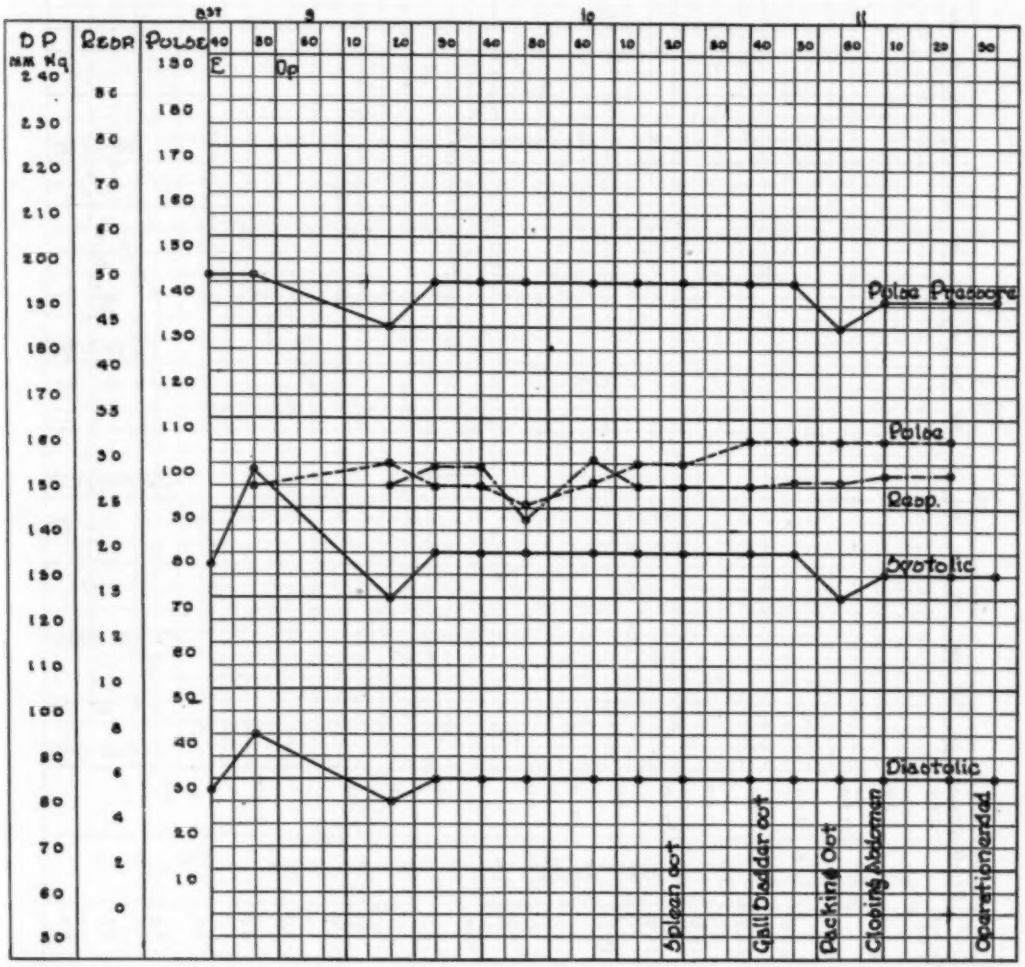

Fig. 10A: Anesthetist's record during splenectomy and cholecystectomy. Splenectomy difficult because of adhesions. Patient in good condition. Moderately severe congenital hemolytic jaundice with gall stones. In spite of long and severe operation pulse pressure remained almost constant.

it is safer to supplement smaller doses before and after operation with bromides and drugs of that ilk if entire elimination is unpracticable.

The objects of intravenous injection of fluids are to restore and to maintain the natural quality and quantity of circulating blood. Transfusion of blood from properly selected donors is superior if performed preferably by Vincent's paraffin tube or less acceptably by a syringe method. Two facts have been established, but have been given too little recognition. Grouping of individuals only is dangerously inaccurate; in addition, the cells and serum of donor should be tested against the serum and cells of the recipient to eliminate all possibilities of hemolysis. The untoward effects of sodium citrate methods as indicated by Unger[13] and others suffice to condemn its use except in unusual emergencies notwithstanding its much heralded ease of performance and alleged safety.

Blood transfusion is not always possible and may even be undesirable. Satisfactory substitutes for blood must be of types that are retained in the blood vessels and provide excess nourishment for injured heart muscle in an easily available form. Hypertonic glucose solutions have been found to be effective in 5% to 50%[14] strength and 20 to 500 c.c. in amounts. Administration must be under accurate control. A simple apparatus constructed by Thalhimer[15] for this purpose, but described in the principle previously by Freidell[16] fulfills requirements.

The virtues attributed to glucose solutions are many. It is alleged to nourish the heart directly and to attract into the circulation substances from extravascular tissues, possibly salts, that are essential to heart muscle tonicity. Also it is said to supply fuel denied by defective carbohydrate metabolism[17], to replace the excess fuel used in combating infection[18], to be useful in supplementing or even substituting for digitalis[19] and to be valuable even as a preoperative drug[20] in making anesthesia easier of induction. There are a few vices though not widely advertised. Any intravenous injection is discomforting and may even cause a fatal syncope[21]. If impure or improperly sterilized and thereby caramelized, glucose is dangerously irritating and causes severe chills when given intravenously or focal necroses when injected subcutaneously. Glycosuria can be induced, also diuresis, but seldom to an extent of material disadvantage, if rational precautions are taken. Isotonic glucose solution can be given subcutaneously and continuously as advocated by Bartlett[22] with great benefit or glucose may be administered per rectum[23] in considerable concentration without irritation or inhibitory influence on bowel.

Reduction of velocity of blood stream results in stasis in various organs and tissues.[24] When this stasis amounts to a material reduction in volume and increase in density of circulating blood, it is called exemia and held to be an evidence of shock. Exemia (introvascular stagnation) may or may not be aggravated by anemia. When anemia is relatively slight, auto blood transfusion can be effected simply by overcoming the exemia, i. e., by increasing the volume and velocity of the

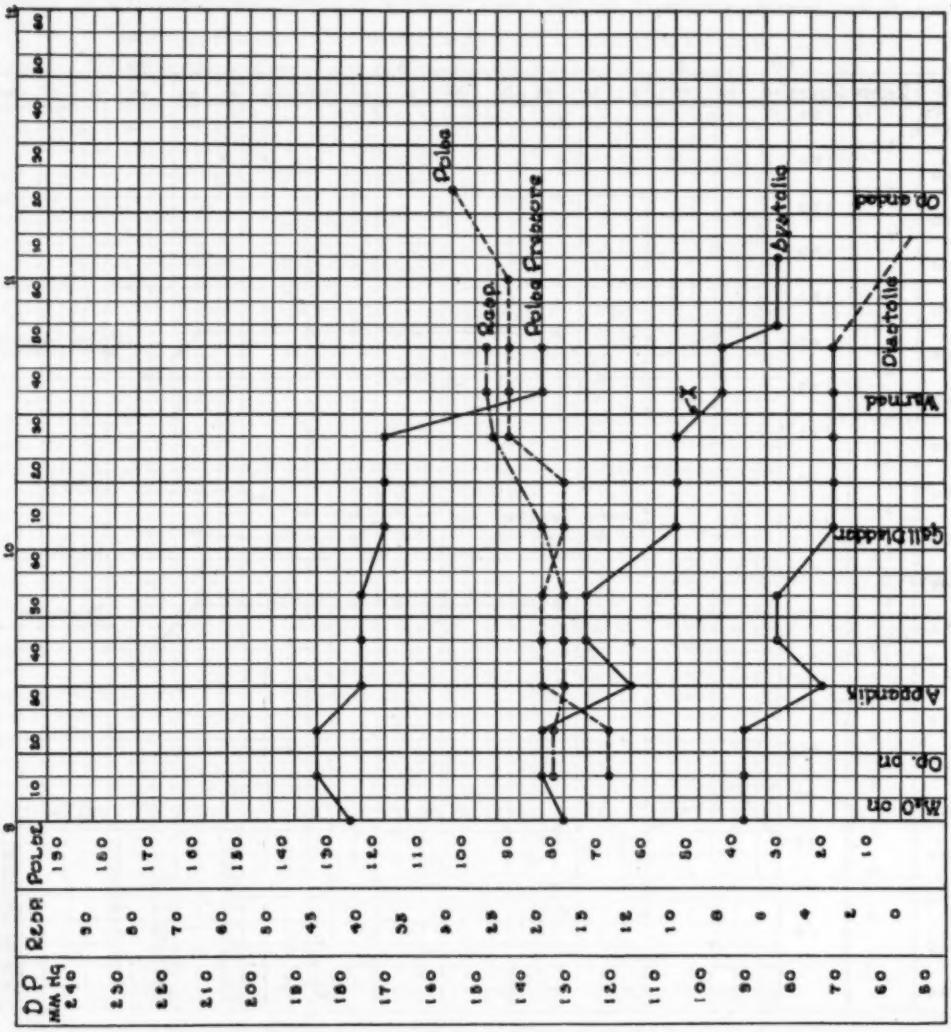

Fig. 10B: Anesthetist's record during cholecystectomy and appendectomy. Illustrating an ominous fall in blood pressure. This patient made a good recovery but would have been far safer had she received glucose (possibly gum glucose) and digitalis when anesthetist gave warning (X).

blood in circulation. Glucose solutions may fail under such conditions and when transfusion is not feasible, the addition of gum acacia can be effective. Many arguments have been advanced against the use of gum. Every patient who has died after receiving gum under our direction either in civil or military practice has been examined after death. No evidence of agglutination, delayed coagulation or anaphylactoid reactions said to be produced[28] by acacia have been found. Stewart states that its use is unphysiologic. So is amputation, but at times it is quite useful as a life saving measure. If gum-glucose is properly prepared, injected gradually and above body temperature, it is only less valuable than blood in surmounting crises of hypotension, myocardial fatigue and inevitable exemia whether or not they be dignified by the name of shock.

Apparently, digitalis, if given early and generously, is the most reliable drug. Large doses as used by Crile and advocated by Robinson[29] are more effective than the smaller and repeated. A standardized tincture diluted with a few c.c. of water or added to fluid being given intravenously is the best form and may be given in 1-5 c.c. amounts.

The measures advocated are possessed of the great virtue of harmlessness for the strong, and can therefore be employed, indeed should be employed, as would be indicated if the condition of

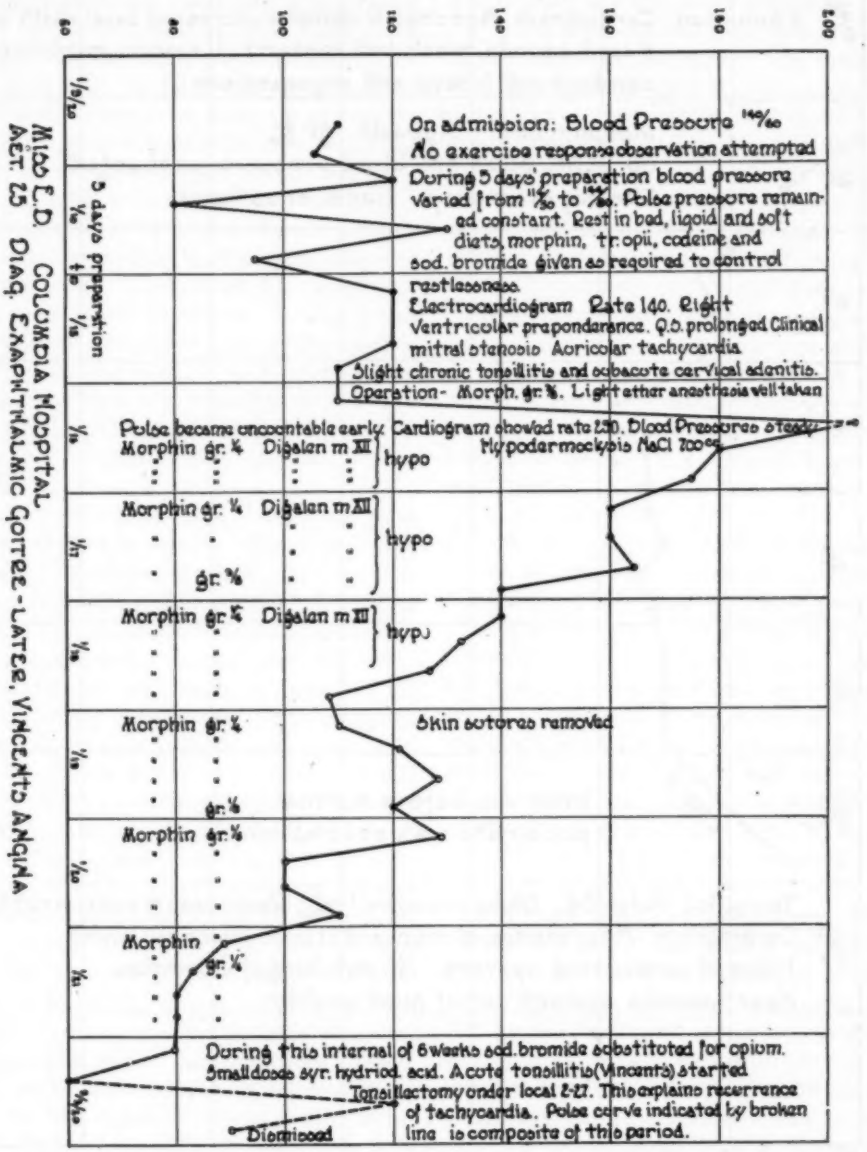
Miss E.D. Columbia Hospital
Aet. 25 Diag. Exophthalmic Goitre - Later, Vincents Angina
On admission: Blood Pressure
No exercise response observation attempted
During 5 days' preparation blood pressure
Varied from
Pulse pressure remained constant. Rest in bed, liquid and soft diets, morphin, tr. opii, codeine and sod. bromide given as required to control restlessness.
Electrocardiogram Rate 140. Right Ventricular preponderance. Q.S. prolonged Clinical mitral stenosis Auricular tachycardia.
Slight chronic tonsillitis and subacute cervical adenitis.
Operation - Morph. gr. ¼. Light ether anesthesia well taken
Pulse became uncountable early
Cardiogram showed rate 230. Blood Pressure steady
Hypodermoclysis NaCl 200cc
Morphin gr. ¼ Digalen m XII
hypo
Morphin gr. ¼ Digalen m XII
gr. ⅛
hypo
Morphin gr. ¼ Digalen m XII
hypo
Morphin gr. ¼
Skin sutures removed
gr. ⅛
Morphin gr. ⅛
Morphin
gr. ¼
During this interval of 6 weeks sod. bromide substituted for opium.
Small dose syr. hydriod. acid. Acute tonsillitis (Vincents) started
Tonsillectomy under local 2-27. This explains recurrence of tachycardia. Pulse curve indicated by broken line is composite of this period.
Discharged
5 days preparation
1/10/20
1/15
1/16
1/17
1/18
1/19
1/20
1/21
1/22
1/23
60
80
100
120
140
160
180
200

Fig. 11: Unusually toxic goiter in a normally placid young woman. A high degree of delirium and restlessness was controllable only with opium, which in this instance was positively indicated in doses giving physiologic effects. Pulse rate rose during induction of ether analgesia to 219, counted by electrocardiogram. Her pulse pressures did not fluctuate materially during operation or later. Preservation of myocardial competence explains her recovery, which is now, nearly three years later, complete, i. e., exophthalmos is gone, myocardial competence and vasomotor stability have been re-established. Thirteen months ago she went through a normal labor without showing an abnormality during pregnancy or puerperium.

each patient's myocardium was less favorable than was suspected.

Preparation for operation cannot be made a routine. Patients with weak hearts should be given necessary rest in bed, cajoled into complacency and assured the proper quantity and quality of blood. Occasionally, longer periods, during which gradually increasing outdoor exercises, at

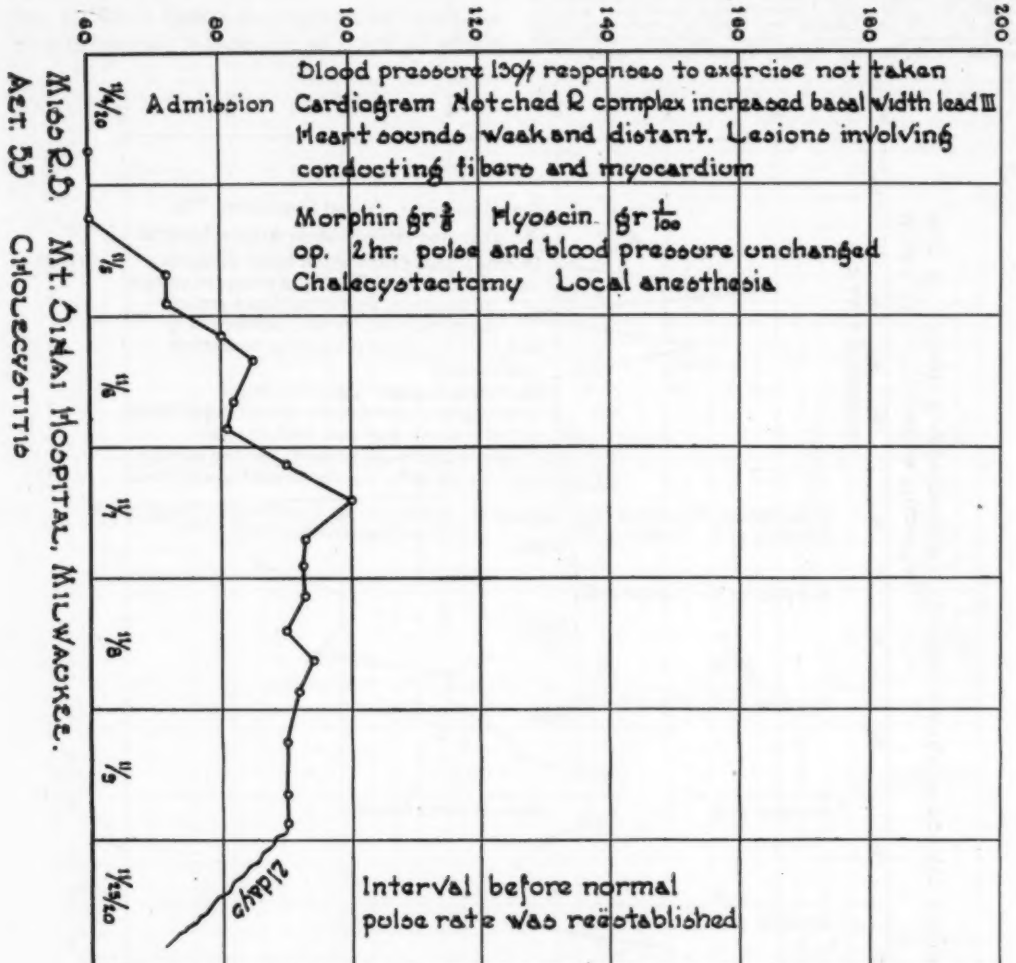

Fig. 12: Moderate tachycardia of auricular origin reaching its peak the second day following operation and continuing during three weeks of bed rest. If 500 c.c. of 5% glucose and 3 c.c. of tincture of digitalis (intravenous) had been given immediately after operation, and repeated the next day, convalescence might have been shortened.

The subsequent history of this patient has proven that even very serious myocardial defects (as demonstrated in the electrocardiogram) may clear, if the source of cardiac irritation is promptly removed. It is noteworthy that an electrocardiogram taken six months later revealed no abnormality of "QRS" group.

times digitalis (unless there be delayed conduction), sunshine, etc., may materially enhance the chances of recovery. Too little preparation, particularly of those who recently have had a severe intoxication, as from tonsillitis, or too prolonged preparation of those having chronic obstructive intestinal lesions are to be avoided. The average patient does not need catharsis. When this is desirable the least noxious dose should be taken after lunch of the day preceding operation after which fruit juices and water should be consumed plentifully. Sleep is so desirable that soporific drugs are indicated. There is no excuse for making the morning of operation hideous by early awakening for shaving, enemas and other forms of avoidable cruelty. Quiet is to be secured after the preliminary drugs are given and above all patients should so far as possible be made physically and mentally inactive. There is no more reason for permitting a robust individual to walk to an operating room and climb upon a table than to allow this avoidable strain to be accepted by one suffering from aggravated hyperthyroidism. The latter patient would show it more, but both pay for this lack of consideration of their comfort and welfare.

A final selection of the type of anesthesia to be employed may not be possible before a patient is on the table. Many desire a local; for some it is unwise or impossible. The average individual is best served by local infiltration supplemented with gas oxygen analgesia. During operation, anesthetist or surgeon can usually recognize in advance of necessity indications for giving glucose, perhaps with digitalis (Fig. 9). Since no harm can be done, there should be no delay. Timely aid can prevent what delayed treatment cannot trophy and spasm, the clinical course and hemorrelieve. This applies particularly to patients with damaged hearts, who have been subjected to excess strain, particularly that of unavoidably deep anesthesia. Intravenous injections may also obviate the necessity for terminating an operation before its object has been achieved.

Postoperative care is more effective if conducted prophylactically rather than curatively. Blood, glucose, gum-glucose with or without digitalis provide the best means to prevent serious tachycardia. Fluids by mouth, by rectum or subcutaneously are also useful. Personal attention can curtail the need for narcotics, and, by cooling the febrile and warming those who are cold, reduce discomfort and the expenditure of energy. Later treatment of those suffering from myocardial handicaps is too obvious to permit of discussion, save of one point. They should be kept prone until after all tendency to tachycardia is past and then allowed to increase activities only as rapidly as cardiac competence permits. Preferably the after care should be permanently under the direction of a competent internist.

It is not presumed that some patients suffering from myocardial handicaps of the more severe types cannot survive general anesthesia or that all patients are permanently injured thereby. It is, however, maintained that most patients can be operated upon in spite of much weakened hearts with likelihood of immediate survival, and not only without danger of cardiac damage, but with prospect of material benefit. No group of patients illustrates this point better than the sufferers from chronic cholecystitis who commonly have myocardial injuries. Cholecystectomy under local anesthesia (Fig. 12) has been followed by myocardial recovery even after cardiograms showed a severe type of lesion indicative, if permanent, according to Willius, of a life expectancy of 8½ to 22 months. Others have been benefited materially if to a less degree (Fig. 9). They were enabled to eat again without fear of distress and a source of continued myocardial irritation was eradicated. Cholecystostomy under these conditions is to be avoided. Recurrences are too common, and in addition the dehydration from free bile drainage can cause a fatal tachycardia. On the other hand cholocystectomies under general anesthesia, or under local supplemented with too large doses of morphin, have been followed with tachycardia at times uncontrolled when intravenous injections were not used (Fig. 8) and occasionally when they were employed tardily (Fig. 6).

As a result of too frequent disasters following operations upon the gall bladder, internists who appreciate the untoward influence of chronic cholecystitis upon heart muscle are loath to sanction surgical treatment, particularly cholecystectomy. More unfortunately still there is a procrastination when the greatest benefits are obtainable, namely by prompt intervention at the time when the indications are most urgent prophylactically but are assumed to be insufficient to justify the supposed risk.

Another category of maladies deserves special

mention. Patients suffering from intrathoracic lesions have also been given too little consideration from the standpoint of protection and rehabilitation of function. For example, the most common ailment, empyema, has been treated so as to "cure" the suppuration but without reference to subsequent disability which may average 50% with so-called perfect results. This is largely avoidable and is due to failure to appreciate the interdependence of respiratory and circulatory mechanisms and to realize that the functional integrity of both depends upon maintenance or restoration of normal vital capacity of the lungs. Likewise pericarditis with effusion is frequently overlooked and more frequently untreated when, as Whittemore[27] has proved, relief is safely and easily obtainable. Pericarditis with parietal adhesions is similarly neglected although simple costatectomy (cardiolysis) would materially reduce the cardiac burden. Indeed the whole field of intrathoracic therapy is open to reconsideration upon the basis of rehabilitation of function which lies chiefly in a reduction of heart muscle burdens.

In effect, methods now available make it possible to afford surgical relief to patients so that heart muscle may not only be protected from material transient or permanent injury but be assured ultimate benefit when the disease for which operation is undertaken exerts unfavorable influence upon its integrity. As Finney has so often stated: "Surgery has advanced to a stage when it is no longer the ninety-seven patients out of a hundred who require attention, but the ninety-eighth, ninety-ninth and one hundredth now accepted as inevitable fatalities who demand consideration." We believe it possible to go a step farther by adopting the philosophy that the measures designed to safeguard the last three should be applied to enhance the welfare of the ninety and seven. It is wiser to prevent sheep from straying afar than to indulge in the overexertion required to restore the wanderers. Though the occasion for rejoicing may be great when successful, avoidable failure attributable to the methods in vogue are many.

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DISCUSSION

Dr. A. J. Carlson, University of Chicago, Chicago, Illinois.

Mr. President and Gentlemen: I really haven't anything to say, except that I should like to second the effort made by Dr. Yates. The essential point in his paper, as it strikes me now and has a long time, is that many surgeons sin in keeping the patients too long under anesthesia. You have undoubtedly seen the same thing which I have seen, of an inexcusably slow surgeon putting a patient under ether out in the hall or in another room, half an hour before he is ready to operate; he then starts to wash his hands, smoking a cigarette meantime and visiting with other physicians, and keeping the patient under anesthesia possibly 3 or 4 times the length of time that is necessary for the operation. For a number of years I have been trying to impress on the medical students, what does not seem to be realized generally, that the anesthetics are poisons, and the least you can give of the poison, the better. Now Dr. Yates has touched on another point still more physiological, namely, that you should diagnose and try to alleviate any symptom which is below par in your patient. Now that is a hard thing to do. It is easier to write a paper on, Dr. Yates, than it is to do it, because while we appreciate those heart conditions, many of the things we do may not help the heart very much. But what I plead for is that point of view, that those of you who practise surgery actually take those things into consideration and develop speed, and have your patient practically out of your anesthesia when your last stitch is taken instead of, as in many cases in the past, so doped with ether, if not chloroform, that it takes hours and hours for them to come out. That is what I would call, and what Dr. Yates would say is the physiological point of view, the bringing in to your practice of surgery something else than mere plumbing. If that is done, gentlemen, I do not believe that anybody in this State Association or anywhere else would get up and recommend a gastro enterostomy for a slight diverticulum in the stomach. Most of you know as well as I know, that our best surgeons are now undoing their past gastro enterostimies, including the Mayo people.

There was one point in Dr. Yates paper that I wanted to ask him about. I did so personally. It is a rather important point. Dr. Yates was in Dijon,

and he saw some of Mountain's work, and Bullis's work in connection with the gum solution instead of the ordinary Ringer solution or salt solution, for profusion. Now Yates knows as well as you and I know that even during the investigation of shock and prevention of shock during the war, and in the laboratories, experiments and observations of patients came out, and it has come up since then in a recent paper in the A. M. A. on the use of gum solution. I wanted to ask Dr. Yates, because he is competent to answer that question, whether we are yet justified in using a gum solution as a helpful, or in every case as a harmless medium for helping low blood pressure, or breaking up the circulation. I am not dogmatical on that point. I want to know because of this conflicting situation in the literature.

Dr. Edward Evans, La Crosse:

Mr. Chairman and Gentlemen: I should like to draw attention to a very significant thing that is the discussion of a surgical paper by a physiologist; in other words, the significance of physiological surgery. Dr. Yates' paper, I think, is one of the best papers ever presented before this society, drawing our attention to the class of cases that are very often not sufficiently studied by an operator, in contradistinction to the surgeon. I was very glad also to have Dr. Yates emphasize, perhaps not as strongly as he ought to emphasize the significance of the ordinary examination of a patient for myocardial weakness. He dwelt on the necessity of examining those patients as to how they resist ordinary fatigue. McKenzie, I think has called attention to the great significance of this, and that instead of the ordinary or extraordinary tests for myocardial weakness, we should get the patient's past history, and see how they resist fatigue, in the ordinary things they do, i. e., as to how the heart resists ordinary fatigue. I think it is of very great significance in some of the cases mentioned, especially the chronic colloid goiter, and the gall bladder patient that you make a very careful study of their heart before operating on them, and come to what we might call a physiological diagnosis, as to how far we can go in operating on those patients, or, in some of them I believe, not operating at all.

Dr. A. P. Crowell: I should like to ask Dr. Yates if I am right in assuming from hearing his paper if he advocates the use of local anesthesia as a means of doing away with myocardial degeneration in general anesthesia?

Dr. John L. Yates, Milwaukee, Wis.

This paper, due to my negligence, was given the wrong title. It should have been "myocardial deficiency" instead of "degeneration." Dr. Rogers is responsible for the cardiac examinations. When the paper is published, the methods he uses will be mentioned. They are satisfactory in disclosing myocardial deficiency. The exact nature of that deficiency is not always so important, though we prefer, if possible, to get a cardiogram for more accurate determination. The detail of real importance is to learn from the patient, the patient's history and examination if there is an excuse for even a suspicion of myocardial deficiency; if so, that suspicion is developed, and if there is no excuse, we suspect it a little bit anyhow. Upon that basis the attempt is made to employ the safety-first methods advocated by Crile by trying to get the treatment to the patient before the patient needs the treatment.

Dr. Carlson spoke about the reduction of the anesthetic. That can be secured by using local anesthesia alone or combined with analgesia. Whether or not we agree with Crile in his conception of anoci-association, the fact remains that by using local anesthesia, following the methods so well perfected by Farr, at times combined with gas analgesia, it is possible to get by in a large majority of major operations without dangerous narcosis or even a stage of deep anesthesia. We believe from experimentation and observation that it is the deep stage and not the duration of anesthesia that is very dangerous. Therefore, we believe that if, for instance, it is possible to perform satisfactory cholecystectomy with local anesthesia supplemented, if necessary, by gas oxygen analgesia, in an hour or in an hour and a half, without once having that patient in a stage of anesthesia, the immediate danger is almost eliminated and as the effects of gas are so evanescent, the possibility of ultimate harm is likewise minimized.

Dr. Carlson questioned the use of gum acacia. We have all heard the enthusiastic condemnation of gum even unto the third and fourth generation of them that hate it. We have seen editorials in the Journal of the American Medical Association advancing, it seems to me, specious arguments against gum. In the face of this we have the very accurate experimental work conducted by Baylis and his group, subsequently by Cannon and his group, and later by the shock teams in the B. E. F. and the A. E. F. We are convinced if gum is used when gum should be used, if gum is prepared as gum should be prepared, and if gum is used as gum should be used, it is innocuous and may be invaluable.

Dr. Carlson asked why we added gum to glucose. The answer is simple. There are certain types of exemia (by exemia we mean intravascular statis due to a reduction of the blood velocity causing capillary stasis in virtually every organ) when there is not only a reduction in the volume of blood in currency, but also the blood actually in currency is over-concentrated. Under such conditions an auto-blood transfusion in that individual can be performed by washing out the large bulk of blood stagnant in capillaries, particularly that in the intestine, skin, and we believe in the lung, by increasing the volume of blood and thereby increasing the velocity of the blood in circulation. We have tried the relative values of glucose alone, and gum-glucose under similar conditions, occasionally in the same patient, and have concluded that benefits may be obtained from gum-glucose that are greater than from hypertonic glucose alone.

There is no need to discuss the relative values of

gum-glucose and blood transfusion. Blood is superior so far as we know under all conditions and is the only reliable means to combat advanced anemia. Blood transfusion is not always possible nor always desirable. The least unsatisfactory substitute for full blood under critical conditions is six per cent gum acacia in hypertonic glucose up to sixteen per cent as recommended by Erlanger. Whether or not in a given instance to use gum glucose or glucose is a matter of opinion. These means do permit prevention and relief of exemia and, by furnishing an adequate volume of circulating fluid, give the heart muscle the proper hydraulic conditions and fuel to work more economically.

HYPERTROPHIC PYLORIC STENOSIS WITH LARGE MULTIPLE EROSIONS. REPORT OF A CASE IN AN ADULT*.

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and
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Gastric ulceration in which the lesion is multiple, irregular and shallow is not a common condition if one is to judge its frequency by the number of reports in the literature. This comparative rarity and the unusual clinical course and anatomical findings in the case described by us led us to consider it of sufficient importance to warrant its publication.

The patient, a white male, aged 46, waiter and single, was admitted to the Cook County Hospital on December 11, 1922, with a provisional diagnosis of carcinoma of the stomach. He had been ill for eight months with pain in the abdomen, marked loss of weight, strength and appetite and had been vomiting for the last two months.

The pain began in the mid-epigastrium, almost immediately after eating and was at first relieved by vomiting but this relief did not occur in the last few months of his illness. The pain began as an abdominal distress, then developed to a dull pain after meals in the last few weeks and was almost continuous toward the end of the course of the illness.

Vomiting occurred about fifteen minutes after the beginning of the meal and the vomitus consisted of mucus, food, and dark brown material resembling coffee grounds. Other symptoms were constipation, anorexia, loss of strength and a loss of weight of about seventy-five pounds.

He had typhoid at the age of sixteen, gonorrhea at twenty and denied syphilis. Alcohol was used in moderation. The family history was of no importance.

The examination revealed a very emaciated white male. The pupils were equal and reacted to light and accommodation. Nothing abnormal was found in the chest. Palpation of the abdomen revealed a large, hard, tender mass in the upper left quadrant of the abdomen. The tumor was as large as a fist and was movable. The liver was enlarged and reached to the level of the navel. The spleen could not be palpated. The reflexes were normal. The blood showed 3,140,000 red cells, 10,200 leucocytes and a practically normal differential count. The urine was normal. The Wassermann of the blood serum was ++++. The stomach contents one hour after an Ewald meal showed a total quantity of 150cc, free HCL 0 and total acidity 3 degrees. A motor meal was given and 300cc were removed after six hours. The stools were alkaline in reaction but no report was made as to blood.

The x-ray examination revealed a large six-hour residue; the lesser curvature was two inches below the iliac crests and a fairly constant notch was seen on the greater curvature at the pars media. The prepyloric region remained constricted constantly and was funnel shaped. The margins of this region were smooth but the density of this portion as viewed from the antero-posterior direction was irregular.

He died five days after admission. The autopsy was performed by Dr. D. J. Davis of the University of Illinois and in brief showed the following:

The body was markedly emaciated. The teeth were in very poor condition and several cavities and pyorrhea were present. The heart showed a patent foramen ovale and a moderate sclerosis of the coronary arteries. The aorta was practically normal. The lungs contained one healed focus of tuberculosis with bilateral broncho-pneumonia at the bases. The appendix was free and uninvolved. The glands at the lesser curvature of the stomach were very much enlarged and pink but were not hard. The liver was three fingers breadth below the costal arch in the axillary line and was smooth, showing no metastasis or other changes. The stomach was markedly

*Read before the Chicago Pathological Society, May 15, 1923.

dilated and contained about 500 cc of yellowish fluid. The pyloric opening was narrowed. The mucosa of the stomach was red with little evidence of rugae. This smooth surface of the stomach closely resembled that seen in atrophic gastritis.

A large, saddle-back, irregular, shallow ulcer was found on the lesser curvature at the junction of the middle and left thirds of the stomach, (Figure 1). The ulcer straddled the lesser curvature, involving the anterior surface more than the posterior. The greatest diameters of this ulcer were 7x4.5 cm and the depth about 1.5 mm. The margins were slightly rounded and distinct but were supple and not undermined nor swollen. There was no zone of hyperemia in the vicinity of the ulcers. The entire ulcer base was finely granular, clean and nearly of the same color as the surrounding mucosa. No infiltration, thickening or hardness was found anywhere in the vicinity of the ulcers. Four smaller and irregular ulcers, similar in character to the one just described were also present. One was 3x1.76, was very shallow and was located on the lesser curvature, one cm. from the pyloric orifice. Another, more annular, 2x1 cm. was also present on the lesser curvature and about midway between the esophageal and pyloric orifices. Another, somewhat stellate shaped ulcer, was found on the greater curvature about 5 cm. from the pyloric orifice and still another was located close to the one just described. The peritoneal surface was normal. No ulcerations were found in the duodenum or intestine.

The cut section of the stomach wall in the region of the ulcers showed that the lesion was at the expense of the mucosa only and that the other layers were not involved in any way.

The pylorus showed some very striking features. The mucosa was atrophic and showed the same general changes previously described. The submucosa was also of normal thickness and showed nothing pathological either on gross or microscopic examination. There were no vascular changes either in the mucosa or submucosa. The wall of the stomach at the pylorus measured ten mm in thickness and this enormous thickening of the wall was due to an hypertrophy of the inner circular muscle layer which formed seven-tenths of the entire thickness of the wall. The usual microscopic changes of hypertrophy of muscle tissue were found. There were no fibrosis, infiltration or other evidences of inflammatory reaction in the muscularis. The outer muscle layer was of normal thickness and was free from pathological changes. The serosa was unchanged. The muscle layers in the duodeum were normal and there was no evidence that the hypertrophy of the inner muscle layer of the stomach extended beyond the pylorus proper.

The microscopical examination showed the following changes; (Fig.2). The peritoneum was unchanged. The same was true of the outer and inner muscle layers except as already noted in the pyloric region. The submucosa was not thickened and contained a moderate number of capillaries; some of the veins were lidated, especially just under the erosions. A very moderate degree of endarteritis was present but the veins were unchanged. There were no vascular changes or infiltrations about the vessels as described in syphilis of the stomach. There was no thrombosis of the vessels. The muscularis mucosae formed the base of the erosions, under which the layer was somewhat thickened and slightly fibrosed. There was no infiltration of this layer.

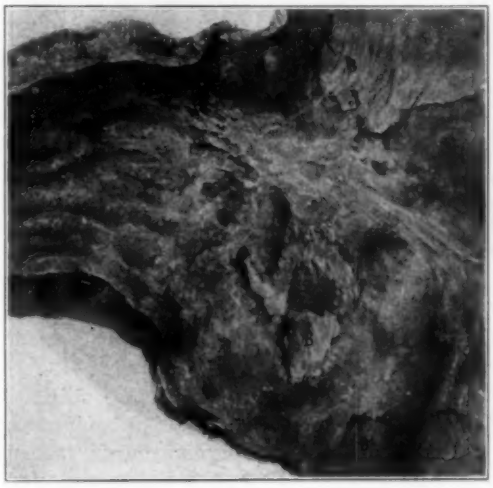

Fig. 1. Pyloric portion of the stomach showing hypertrophied musculature (a), large shallow and irregular erosions, (b).

The mucosa beyond the erosions could not be accurately studied because of the post-mortem changes which had set in. The base of the erosions was formed of a diffuse lymphocytic infil-

tration and covered by a thin layer of fibrin and necrotic tissue. Except for the infiltration, there seemed to be no marked inflammatory reaction or hyperemia of the mucosa. Numerous Russel bodies occurred. No evidence of malignancy or hemorrhage in or near the erosions was found. The erosions did not involve the entire thickness of the mucosa in some of the smaller lesions. The sections stained with Weigert elastic tissue stain showed a moderate degree of endarteritis but not more than is found in any long standing non-specific inflammation. The elastic tissue of the muscularis mucosae was diminished and was completely absent in some places under the erosions (Fig. 3). Sections were stained with methylene blue, Gram, Ziehl-Nielssen and with Levaditi stains. Only a few Gram positive, long bacilli were found near the surface. An occasional Gram positive coccus was also found in this region. No tubercle bacilli or spirachetes were seen.

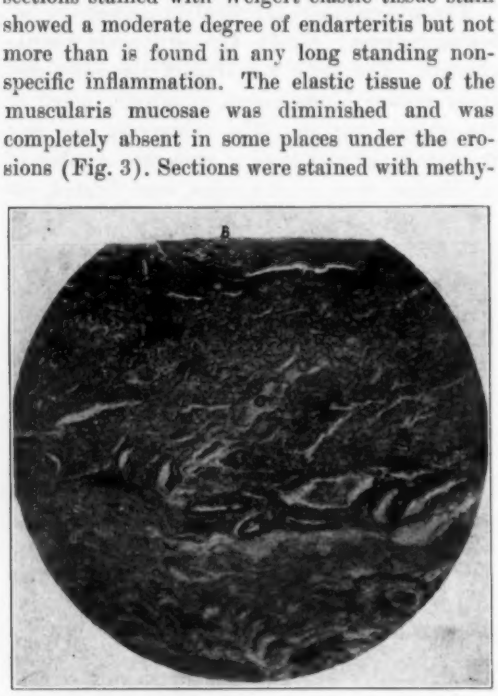

Fig. 2

Fig. 2. Base of erosion showing round cell infiltrate at base, (a) covered by a layer of fibrin and necrotic tissue, (b) and moderate dilatation of the veins of the submucosa under the erosion, (c).

A search of the literature was made for reports of multiple shallow and irregular ulcerations or erosions of the stomach and the following were the conditions most closely resembling those found in our patient.

Dieulafoy[1] described a condition which he called "Exulceratio Simplex." The onset was sudden with profuse hematemesis and without previous digestive disturbances. The anatomical findings were an acute ulcer which was usually round or oval but sometimes was stellate. The ulceration was shallow, usually limited to the mucosa, supple and the margins were not thickened. The veins and capillaries of the submucosa were somewhat dilated and a moderate endarteritis was found. Small miliary abscesses were found in the mucosa and Dieulafoy thinks these were the starting points of the ulcers. Our specimen differs from this condition in that no such abscesses were found and by the more chronic course clinically and anatomically as evidenced by the lymphocytic infiltration. There was no hematemesis either at the onset or at any other time during the course.

Another form of ulceration described by Dieulafoy is the pneumogastritis in which the mucosa showed pin-head, hemorrhagic erosions of the pylorus. The lesions and glandular tissues contain numerous pneumococci derived from pneumococcal infection elsewhere in the body. There was no such infection in our case and the stains for bacteria in the tissues showed no pneumococci.

W. R. Stokes[2] described a diphtheritic ulcer of the stomach which occurred during the course of a pharyngeal diphtheria. The ulcer was shallow, 2.5x1cm. in diameter and was situated on the greater curvature near the pylorus. The base was covered by a dark yellow, almost black membrane under which was necrotic tissue. The ulceration reached only to the muscularis and the infiltration was chiefly polynuclears. Numerous diphtheria bacilli were found in the ulcer and necrotic tissue. The condition differs from that seen by us that the causative disease and organism were absent in our case.

Tuberculosis of the stomach has been described by Reigel[3] and Brunner[4]. There were miliary nodules in the serosa and in the ulcer area. The base was cheesy, the margins thick, granular and undetermined. Giant cells, necrotic areas and tubercle bacilli were found. The condition is usually associated with tuberculosis elsewhere in the body. Our patient had no active tuberculosis; the margins of the ulcer were not thick or undermined; there were no nodules on the serosa or in the ulcer and no tubercle bacilli were found in the tissues.

Pilcher,[5] described a condition in which there were multiple non-contiguous erosion or ulcers of the mucosa which sometimes reached to the muscularis. There was a round cell infiltration

and engorgement of the vessels in the submucosa in some cases. The stomach contained large numbers of streptococci but no statement was made if the bacteria were in the cavity or wall of the stomach. It is interesting to note that more than half of the patients had abdominal trouble elsewhere, such as gall bladder, appendix, or pancreas. A large number had pylorospasm which was demonstrable at operation. These cases resemble ours in several respects. Both had achlorhydria, pylorospasm and superficial erosion of the stomach mucosa. The difference lies in the large number of streptococci found by Pilcher and by the abdominal pathology found elsewhere in the abdomen which could account for the pylorospasm.

Fig. 3

Fig. 3. Weigert elastic tissue stain showing a moderate degree of endarteritis but no involvement of the veins.

An instance of large, superficial erosion was reported by R. Langerhans[6]. The patient was a female who had had eclampsia for several days. The autopsy showed several erosions, some of which reached six mm. in diameter. There was no evidence of uremia or renal involvement in our patient and the lesions were of much larger size. The etiology of the case reported by Langerhans was not the same as in our patient.

The erosions described by Einhorn[7] were characteristized by the finding of small pieces of mucosa in the lavage water. There was pain after meals and the acidity of the stomach contents varied. The shreds of mucosa showed good preservation and many extravasated blood cells. The largest piece recovered was 4 cm. in diameter. Little anatomical study has been made of this condition but it probably corresponds to the well known form of erosion seen in some stomachs in which the eroded area is small, and shows hemorrhagic reaction. This condition differs from that observed by us in the absence of pyloric hypertrophy and spasm, the clinical course and hemorrhagic features in the recovered pieces of mucosa.

Sansoni[8] described a condition which he called "Gastritis Ulcerosa Anachlorhydria." There seems to be little difference between this condition and that described by Einhorn. There was an absence of HCL and hematemesis was sometimes present. The points of difference when compared with our case are the same as described under the erosions of Einhorn.

Nauwerck reported an instance in which there were multiple ulcers and erosions of the stomach. The ulcers were in various stages of healing; some were completely healed with scar contraction while others had completely perforated the entire thickness of the stomach wall. There were also hypertrophy of the pyloric wall and absence of free HCL. Our case had no deep ulcerations, the erosions were all of about the same age and there was no evidence of hemorrhage in the vicinity of the lesions.

Shallow ulcers with stellate erosions were described by D. Gerhardt[10] in the stomach of a patient who died of pulmonary tuberculosis. The lesions were up to 6mm in diameter and were multiple and shallow. The mucosa was infiltrated with round cells and lymphocytes and some of the deeper ulcers showed a terrace formation of the margins. There was much extravasated blood in the interstitial tissues and at the base in one of his cases. The small size, signs of recent inflammation and marked hemorrhagic character differentiate it from the lesion found by us.

Axel Borbjärg[11] described two cases in which there were abdominal pain, vomiting, emaciation and x-ray findings of pyloric stenosis. Operation revealed a large shallow erosion. Microscopical examination showed a purulent involvement of the deeper layers in one case and considerable perivascular infiltration in the other. There was no malignancy.

Syphilis of the stomach was at first suspected

in our patient in view of the positive Wassermann and the unusual form of the erosions. Closer examination at once showed that this was not the case as the submucosa was not thickened, there were no panphlebitis or panarteritis, no perivascular or diffuse infiltrate comparable to that seen in syphilis of the stomach and no miliary gummata as described by one of us[12]. There were no gross or microscopic luetic changes in other parts of the body.

Consideration as to the probable comparative duration of the pyloric hypertrophy and the erosions found in our case leads us to believe that the hypertrophy was the older process. This assumption is based on the enormous degree of hypertrophy found, a degree which must have taken several months for its full development. The absence of any evidence of inflammatory reaction in the inner muscular layer which might have caused a more rapid thickening of the muscularis further supports this view.

The shallowness of the erosions, the comparatively slight degree of round cell infiltration at the base and sides and the absence of vascular changes of any degree, especially of endarteritis such as is found in the vicinity of almost any chronic inflammation leads us to assume a more recent origin for these defects in the mucosa. This view is further supported by the well known fragility of the mucosa in achlorhydria,[13] a condition which was certainly conducive to mechanical injury from any cause.

It is rather difficult to assign a direct cause for the erosions. That the lesions were not caused by vascular changes with resulting anemic necrosis is evidenced by the failure to find thrombosis or embolism of the vessels or sufficient changes in the vessel walls themselves. There were no hemorrhagic zones at the site of the ulcerations which could account for the loss of substance by small hemorrhages in the mucosa with subsequent digestion of these areas as a starting point for the formation of the erosions.

Postmortem changes or gastromalacia could be ruled out by the presence of a distinct round cell infiltration at the sides and base of the lesions and by the coating of fibrin and necrotic tissue on the base of the erosions while the adjoining portions of the mucosa were still in a fair state of preservation and showed none of these changes.

Bacterial invasions as described by Rosenow[14] can be ruled out in view of the absence of bacteria in or near the erosions and by the absence of marked inflammatory reaction.

The absence of free HCL speaks against autodigestion but the fragile condition of the mucosa in achlorhydria could easily have been mechanically injured by retained particles of coarse food. The x-ray showed a marked retention in the stomach and this could certainly have been a factor in such an injury. There can be little doubt that the development of the erosions increased the pylorospasm and that this aided in the development of the pyloric hypertrophy.

The hypertrophy and spasm of the pylorus are not easily explained. It is possible that it was the remains of an infantile pylorospasm which was not of sufficient degree to cause marked disturbances. The literature contains seven reports of idiopathic spasm and hypertrophy of the pylorus in the adult ([15], [16], [17], [18], [19]). These were verified at the autopsy or operating tables and in none was there any pathology elsewhere in the abdomen which could account for the spasm by a reflex or other mechanism. The same was true in our case. Riegel,[20] Boas [21] and Schnitzler,[10] believe that it is a motor neurosis or is due to some nervous disturbance. The case reported by Nauwerck will serve as an example. The patient was a female, age 23, who was ill for one year with anorexia, severe pressing pain in the epigastrium after meals and sour eructations. Vomiting occurred two to three hours after meals later in the course. The vomitus was copious, acid and showed some signs of long retention in the stomach. Examination of the patient showed marked emaciation, the stomach contents showed some blood and was anacid later in the course of the illness. The stomach was markedly enlarged and a sausage shaped tumor was found to the right of the navel. The mass was smooth and movable. The autopsy revealed a very large stomach and the tumor was formed of the pylorus. There were no enlarged glands or adhesions anywhere in the abdomen. The mucosa was gray, covered with a thin layer of mucus and had no rugae. There were no ulcerations. The pylorus was markedly contracted and the muscularis at this portion was 7 mm thick. The duodenum was normal so that the hypertrophied pylorus resembled a cervix projecting into the vagina.

In considering the findings in our case and studying the reports of similar conditions as found in the literature, we believe that the con-

dition was first that of an idiopathic pylorospasm and hypertrophy, perhaps the expression of a motor neurosis and that this led to retention of the stomach contents. The fragility of the mucosa in achlorhydria made this layer particularly susceptible to slight mechanical injury which could have been caused by retained, undigested, and perhaps coarse food particles. It was an easy matter for the erosions to grow larger, once they were started and it is very likely that the presence of the erosions increased the tendency to pylorospasm and hypertrophy, thus forming a vicious circle.

The treatment which suggests itself for such a condition is first internal and then surgical. Small and frequent meals of milk or other liquid, lavage with weak silver solution as suggested by Einhorn and antispasmodics would form the basis of the treatment. Pyloroplasty and similar operations were not as successful as gastroenterostomy in the few cases which were operated on but the number was too small upon which to base a definite opinion as to the proper surgical procedure in such instances.

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Adhesions of the Appendix Associated With Intestinal Obstruction

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Adhesions are the most frequent cause of strangulation of the bowel, and strangulation is the most frequent cause of acute intestinal obstruction. Richardson[1] recently collected a series of 118 cases from the Massachusetts General Hospital in which he found that 75 cases, or 63%, were definitely due to adhesions. In Fitz's series of 101 cases (quoted by Osler), 70% were due to adhesions. Since about 70% of all cases of strangulation occur in the right iliac fossa, one immediately thinks of the appendix and the role it may play in the production of this condition. In Fitz's series 16% of the 101 cases were due to adhesions of the appendix. Hilgenreimer (quoted by Wilms)[2] found that of 298 cases of strangulation ileus due to adhesions, appendiceal adhesions acted as the constricting bands in 34, or 8.7%, of the cases.

As early as 1853, Virchow[3] first scientifically discussed adhesions in adults and also found that such abnormalities were occasionally found in the fetus. Since then, a vast literature has accumulated, and the last word has not yet been said.

The formation of these adhesions represents the reaction occurring in a localized peritonitis, and as far as the appendix is concerned, may be brought about by any of the following conditions: Repeated attacks of acute catarrhal appendicitis (which later assumes the proportions of a chronic appendicitis), the so-called acute diffuse appendicitis in which all coats of the organ are involved, purulent appendicitis, occasionally gangrenous appendicitis, and sometimes by a tuberculous appendicitis or a carcinomatous appendix. When the peritoneum becomes involved due to any of these inflammatory affairs, it responds to the irritant action of the bacteria or their toxins by a local hyperemia, edema of the superficial layers of cells, and by exudation. The character of this exudate varies according to the type and number of organisms present, and upon the presence or absence of foreign and irritant material such as bile or gastric juice. The exudate as a rule is serous, sero-fibrinous, or fibrinous, but in fulminant cases death may occur before any peritoneal reaction results.

This inflammatory exudate plays a protective role, due chiefly to the bacteriolytic properties of the normal peritoneal fluid, and to phagocytosis by the normally present cells. As a result of the outpouring of this sero-fibrinous or fibrinous exudate, a fine fibrinous network is deposited on the involved peritoneal surfaces. This network enmeshes the bacteria and other cells. Further exudation occurs, and more polymorphonuclear leucocytes are brought in and continue to destroy the bacteria. When the above reaction occurs somewhat gradually, a third protective measure comes into play, namely, the tendency to encapsulation or the formation of adhesions. The sticky, fibrinous deposit on the peritoneal surfaces results in a matting together of involved organs either by

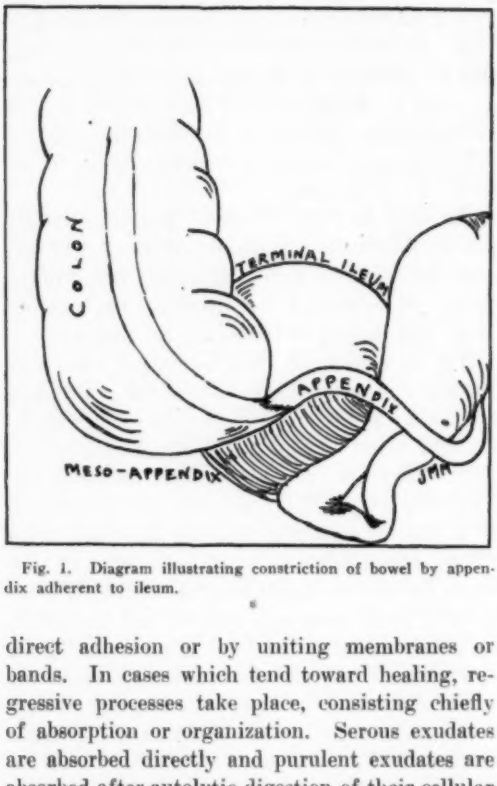

Fig. 1. Diagram illustrating constriction of bowel by appendix adherent to ileum.

direct adhesion or by uniting membranes or bands. In cases which tend toward healing, regressive processes take place, consisting chiefly of absorption or organization. Serous exudates are absorbed directly and purulent exudates are absorbed after autolytic digestion of their cellular and fibrinous elements. When the endothelial surface of the peritoneum has been destroyed, the fibrinous network deposited previously becomes invaded by connective cells, organization continues, the connective tissue cells mature and contract, and the sticky fibrinous deposit becomes thus transformed into more or less permanent fibrous bands. It is by fixation and distortion of viscera by such bands that intestinal obstruction occurs.

Appendicitis, therefore, as a cause of inflammatory adhesions with subsequent possibilities of bowel obstruction, must always be kept in mind. O'Conor[4] in a recent article, emphasizes this point very strongly and he makes it a point to inquire of all patients who present themselves with symptoms suggesting acute obstruction, as to whether or not they have previously had appendicitis. Mix[5] reports an interesting case illustrating this. The patient, a girl of twenty-two, had symptoms of chronic appendicitis for many years. On opening the abdomen for appendectomy, numerous adhesions were noted binding down the appendix, which was very long, to the hepatic flexure of the colon, in the neighborhood of which were also many other adhesions. The surgeon who removed the appendix, did not break down these adhesions because he said that it would take him too long to remove the appendix. Subsequently, this patient began to vomit daily bile-stained fluid. On careful study, this was found to be due to the adhesions which had formed as a result of the chronic appendicitis and which were constricting the bowel in the region of the hepatic flexure. Operation again to remove the adhesions resulted in disappearance of the symptoms and complete recovery. Williams[6] also reports a case of a young man who gave a history of chronic appendicitis and who developed symptoms of acute obstruction. Operation revealed a thickened, indurated appendix adherent to the under surface of the ileal mesentery. Williams, likewise, emphasizes the importance of keeping in mind appendiceal adhesions following unoperated cases of appendicitis. Bogart's case[7] was that of a man, aged thirty-one, who was taken suddenly ill with symptoms suggesting a general peritonitis with intestinal paresis. At operation, general peritonitis was found which was due to a perforated appendix located well down in the pelvis. In addition to this, however, there was found a distended loop of small intestine which had become adherent and kinked in the pelvis. The relationship was obvious. Bogart concludes that in his experience, acute intestinal obstruction other than that produced by paresis of the intestine secondary to peritonitis is a rare complication of appendicitis. The case reported by Jones[8] was

that of a man of twenty, who was suddenly taken ill and in three days presented all the classical symptoms of obstruction. On opening the abdomen, adhesions, apparently of long standing, were found around the cecum. The appendix was as thick as an average-sized finger and more than four inches long. It dipped into the pelvis and its extremity was there adherent, causing conclusion of the gut by traction.

With a frequency equal to those due to appendicitis, are the adhesions following operation on structures in the vicinity of the appendix. In these cases, the formation of adhesions is brought about in the same manner as that detailed above, but here one has the added factor of trauma to consider. Some important facts have been brought out in this connection. It is well known, for example, that different individuals respond differently in the matter of formation of adhesions following abdominal operation, or as Abbott[9] puts it, "For some unknown reason the same conditions are not followed by adhesions in one individual that in another may cause extensive adhesions." The mere presence of the operator's fingers may occasionally be sufficient to produce adhesions, while on the other hand, a prolonged operation with much handling of the intestines may occasion no change[10] (Harrigan). This latter observer ventures the opinion that there exists some distinctive peculiarity of the mesothelial cell which favors its proliferation, and that the lymphatic current of the peritoneum, of which so little is known, may be very important. Corbett[11], at the University of Minnesota, working on the experimental production of peritoneal adhesions, finds that sterile trauma to the peritoneum plays little role in the formation of adhesions. Infection is the primary factor, but he found that infection plus trauma produced the most massive adhesions. Hertzler[12] also calls attention to the greater tendency of adhesions to form subsequent to operative procedure on the lower ileum as contrasted with the jejunum. He thinks that this is probably due to the difference in bacterial flora of the upper and lower bowel. In a recent study Hertzler[13] distinguishes between peritoneal agglutinations and peritoneal adhesions; the former, according to him, involving the upper strata of cells and the latter involving the lower layers of cells. The agglutinations can be broken up by vigorous peristalsis, but the adhesions require operation.

Thus it is seen how frequently the appendix may become involved with the production of adhesions between it and surrounding structures following operative procedure in its immediate vicinity. A case of such a nature was recently reported by Straus[14]. The patient, a woman, of forty-one, came into the hospital with the classical symptoms of an acute obstruction—severe pain over the abdomen, persistent vomiting, tenderness, tympanites, and obstipation. Physical examination revealed a distended abdomen, meteorism, visible peristalsis from left to right, and a prominent bulging in the right lower quadrant. The only significant point in her history was the fact that two laparotomies had previously been performed for the removal of a tumor from the right iliac region. A diagnosis of ileus was made. Operation disclosed an appendix, the tip of which was adherent to the right ovary, which proved to be large and cystic. The appendix was unusually long, measuring over 5 inches. A single loop of gut was constricted about 15 inches from the ileo-cecal valve.

Straus further quotes Meissner, who, in a recent article reports a case of strangulation ileus caused by the appendix acting as the constricting band. The patient gave a typical history of appendicitis, and at operation the tip of the appendix was found adherent to the anterior abdominal wall three finger-breadths below the umbilicus and three finger-breadths to the right of the median line. The tip only was adherent and the body of the appendix acted as the constricting band strangulating a loop of small bowel which lay wedged between the appendix and the anterior surface of the cecum.

A third group of cases are those in which the adhesions of the appendix are congenital in nature, due, no doubt, to some intra-uterine inflammation. While these cases are considered to be comparatively rare and of little significance, Bryant[15] states that "the frequency of occurrence of adhesions in fetuses of both sexes is greatly underestimated."

Wilms, in his comprehensive German monograph, points out that of all the organs, the appendix is the one which, on account of its adhesions, gives rise to strangulation ileus most frequently, and appends an additional list of cases illustrative of this.

Sprengel, in his monograph on appendicitis, states that the appendix may become adherent

to the mesentery, to the lower ileum, to the cecum, in the right iliac fossa, in the region of the rim of the pelvis, to the rectum, to the bladder, to the ovary, or even to the descending colon.

It is well to note in passing, the great frequency of adhesions following appendectomy. In Richardson's series mentioned above, post-appendectomy adhesions stand at the head of the list of post-operative adhesions. Recent articles by Dardel[16], McMullen[17], Cheever[18], and Harrigan[19], also attest to the great number of adhesions following appendectomy. Cheever accounts for this in the following manner: The acutely inflamed appendix lies in a mass of inflammatory exudate. When the appendix is removed there remains a bed of adhesive plastic exudate against which lies the terminal ileum. Conditions are ideal for the formation of prompt and firm adhesions, especially if the usual post-operative paresis of the intestine is marked and prolonged; these adhesions may therefore be the cause of subsequent obstruction.

Because adhesions of the appendix associated with intestinal obstruction occur more frequently than is ordinarily supposed, and because of the great importance attached to them, a report of the following case is warranted.

History—H. S., negress, married, aged 21, was admitted to the Cook County Hospital November 10, 1922, on the service of Drs. Barrett and Culbertson, complaining of severe pain in the lower abdomen with frequent vomiting, of two weeks' duration. The above symptoms appeared suddenly at 2 a. m., October 27, and were present at the time of admission. The vomiting was especially severe during the four days prior to entrance. Constipation had been present for three days. Her past history was essentially negative except for the facts that she had had similar previous attacks each year for the three preceding years, and a profuse vaginal discharge for three years. She had had one normal labor in 1918. Venereal infection was denied.

Examination—The perineum was firm. The external genitalia were negative, except for a marked discharge. Pelvic examination revealed an upright and fixed uterus; the fornices were both densely infiltrated and tender, particularly on the right, but the right appendages could not be palpated as such. The abdomen was exceedingly tender, especially inferiorly where also rigidity was more marked. Distension of the abdomen was easily discernible. There was marked inguinal adenopathy.

Examination of the mouth showed pyorrhea, with marked sordes, and a distinctly fetid odor was present. The pupils reacted to light and accommodation. The heart and lungs were negative. The blood pressure was 130 systolic, 90 diastolic, with a pulse pressure of 40.

At this time, a diagnosis of diffuse peritonitis, beginning as a salpingitis and pelvic peritonitis, was made.

Course—Her condition improved somewhat under hot stupes and enemas, but in a few days became progressively worse, associated with vomiting of intestinal contents. The temperature became subnormal, the white blood count rose to 33,900 per cu. mm. The abdomen became greatly distended, with dullness in the flanks and lower portions, and tympany above. Acute intestinal obstruction following a plastic peritonitis was the diagnosis at this time.

Operation—An ileostomy was performed under local anesthesia by Dr. Culbertson, on November 24. A large quantity of fluid and semi-solid fecal material was allowed to pour out.

Subsequent Course—The patient was improved and felt better. She was discharged on January 6 with a fecal fistula, and sent home to improve her general condition before further operative procedures were undertaken. She returned January 29 emaciated and but little improved. The wound had healed entirely. There was marked tenderness over the entire abdomen. On the following day, she again began to complain of abdominal pain, vomiting again supervened, the pulse rose to 140 and obstipation set in. Her condition grew rapidly worse, the temperature varied from 96 to 98.4; the pulse from 142 to 160. Death occurred at 11 p. m., February 3.

The diagnosis previous to death was: "Chronic pelvic peritonitis producing acute intestinal obstruction, followed by general peritonitis with paralytic ileus."

Necropsy—(Performed by Dr. Singer.) The ileum is markedly adherent to the anterior abdominal wall in the midline and at the site of the defect in the abdominal wall there is an ileostomy opening. There are about two litres of a purulent material in the abdominal cavity, having a feculent odor. The loops of the bowel are bound together firmly by a plastic exudate and there is a moderate amount of fibrous tissue.

The uterus, tubes, and sigmoid are bound together in a dense mass of fibrous adhesions. The cervix is markedly reddened and firm. The uterus is small and the endometrium unchanged. The peritoneal surfaces of the tubes and ovaries are reddened. The right tube and ovary comprise an abscess. The left tube and ovary are thickened and reddened, but contain no pus. The sigmoid is markedly adherent to the surface of the uterus. The small bowel loops are bound together by plastic adhesions. The tip of the appendix is adherent to a loop of ileum by firm fibrous adhesions, and within its loop between the base and the tip are two loops of bowel which are compressed. The pertinent features in the anatomic diagnosis consisted of: acute generalized suppurative peritonitis; supra-pubic mid-line laparotomy wound with ileostomy opening; right tubo-ovarian abscess; fibrous pelvic peritonitis; fibrous adhesion of tip of appendix

with band formation causing partial intestinal obstruction; bi-lateral fibrous salpingitis.

The appendiceal adhesions in the case were evidently due to a combination of two of the factors mentioned above, namely, inflammation of an organ in the immediate vicinity of the appendix, in this case the right tube, and post-operative infection and trauma incident to the ileostomy.

SUMMARY

1. Adhesions of the appendix are a frequent cause of acute intestinal obstruction.

2. These adhesions may be brought about by a direct inflammatory affair such as occurs in the various forms of appendicitis, or inflammation of an adjacent viscus, or:

3. The adhesions may result following operation on structures in the vicinity of the appendix, where infection plus trauma are the basic factors.

4. Adhesions of congenital origin, while comparatively rare, are more common than is ordinarily supposed.

5. Individual peculiarities exist in regard to the reaction of the peritoneum to infection and trauma, little trauma in some people calling forth massive adhesions, while prolonged handling in other cases may call forth no reaction at all.

6. A previous history of appendicitis, if obtained, is important in connection with suspected cases of acute obstruction.

7. The appendix may become adherent to any of the surrounding structures, most frequently to the mesentery, the ileum, the cecum and the anterior abdominal wall.

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SUB-ACUTE BACTERIAL ENDOCARDITIS*

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This paper is based on a study of eleven cases of sub-acute bacterial endocarditis observed during the past two years, and a comparison with that of other writers on the same subject.

The first writer to present the subject of chronic endocarditis in comprehensive form was Osler in his Goulstonian lectures in 1885, but in a later contribution in 1908 he gave a classic clinical description of ten cases seen in the preceding twenty years, of chronic character, not specially marked by chills but with a protracted fever, often not high, of four to twelve months duration, and remarked that he had not noted cases of this particular type at the time of his Gloustonian lectures in 1885.

In 1909 Thos. J. Horder published an extensive resume of microbic infective endocarditis with an analysis of 150 cases observed during the preceding eight years, and in this collection there were eighteen examples of the description regarded as typical of the sub-acute bacterial form.

H. Schottmueller published five cases of so-called endocarditis lenta in 1910, which corresponds to the type under consideration. In recent years a number of French writers have added further contributions, notably Roger, Vaques, Fiessinger and Janet, usually under the title "endocarditis lenta".

In American literature the names of Billings, Rosenow, and Libman are most familiar in connection with the subject, and of these Libman has probably made as extensive contributions as are recorded anywhere.

Libman and Celler in 1910 published a study of 43 cases seen in eight years, with a duration of four to eighteen months. In March, 1917, he, Libman, referred to a study of 182 cases with 65 autopsies, and in 1920 he stated that he had seen

*Read before the annual assembly of the Tri-State District Medical Association at Peoria, Ill., Oct. 30-Nov. 2, 1922.

close to 300 cases of this supposedly unusual malady.

At the meeting of the British Medical Association in 1920 the Medical Section devoted an entire session to the consideration of sub-acute bacterial endocarditis, and the discussions as published in the *British Medical Journal,* Aug. 28, 1920, constitute a comprehensive estimate of present knowledge of the subject.

In defining the term sub-acute bacterial endocarditis it should be stated that it does not concern that form of endocarditis which accompanies acute and sub-acute rheumatism. Whatever the causative micro-organism of acute rheumatism may prove to be, it is generally agreed that the vegetations of rheumatic endocarditis and the blood stream are bacteria free, which is quite different from the group of cases under discussion.

Differentiation must also be made from that form of endocarditis often termed acute ulcerative or acute malignant, which is but one part of an acute pyemia, where the heart affection is secondary to, rather than responsible for, the systemic septicemia. The clinical course is quite different, the duration of the disease varying from a few days (fulminating type) to a few weeks, and the infective micro-organism is much more virulent.

This form of endocarditis is also not to be confused with that type occurring as a terminal event in chronic disease, which is more often latent and only recognized at autopsy.

After excluding these three forms there remains a group of cases that have been described under the various terms of chronic infections, chronic ulcerative, chronic malignant, and chronic septic endocarditis, as well as endocarditis lenta, and for which now the term sub-acute bacterial endocarditis has been generally accepted.

The discussion of the subject will be considered under the following headings:

1. Etiologic significance of a pre-existing valve lesion.
2. Types of infection and infective foci.
3. Characteristic clinical picture.
4. Prognosis and treatment.

1. That a pre-existing valvular lesion is essential for the production of this form of endocarditis is evident from the history of all recorded cases. The chronically damaged valve constitutes a predisposing site upon which the new infection is engrafted.

In one-half of the recorded cases a history of acute or sub-acute rheumatism is noted as the cause of the previous valve lesion. Syphilis and other infections are much less frequent. Arteriosclerotic valves have been observed as the basic lesion, and in a limited number of cases (as in one of ours) the primary valvular defect has been of congenital origin.

Of the eleven cases concerned in this report, the aortic valve was involved in four instances, the mitral valve in six, and in one case the pre-existing lesion was a patent ductus arteriosus of congenital origin.

2. In 90 to 95 per cent of the reported cases distinctive bacteria have been isolated from the blood stream, which in most instances have been classed as some type of anhemolytic streptococcus. This was the micro-organism associated with nine of the eleven cases in our series.

Libman reports an anhemolytic streptococcus mitis as occurring in 95 per cent of his cases, and the influenza bacillus in the remaining five per cent. Because of this constant occurrence Libman is inclined to substitute the term "sub-acute streptococcus and influenzal endocarditis" for the disease instead of "sub-acute bacterial."

In the earlier writings like that of Lenhartz in 1901, when blood cultures were first being made, some type of streptococcus was usually found to predominate.

That other micro-organisms as the staphylococcus pneumococcus and gonococcus may also be causative agents has been clearly demonstrated. Recently Thayer reported 22 cases of prolonged endocarditis due to the gonococcus. Whatever the type of causative micro-organism may be, it has the common characteristic of being of low virulence, with no tendency even in its embolic manifestations to pyogenic effects.

All ages are liable to the disease, but it is rare in childhood and in old age, one-half of the cases reported occurred in the second and third decade, with a somewhat greater frequency in males than in females.

Between the production of the original valve affection and the later reinfection there is often an interval of several or many years of good health. To what extent the rheumatic history, or the pre-existing valve lesion itself, produces a

predisposition to subsequent infection is not easily determined.

In the eleven cases of this series, the following infections were connected with the onset of the sub-acute endocarditis, acute respiratory resembling influenza—seven, acute cystitis and pyelitis accompaning hypertrophy of prostate—one, infective endometritis and salpingitis—one, acute cholecystitis—one, and acute enteritis in one case.

3. The clinical course of sub-acute bacterial endocarditis is so distinctive as to permit its easy recognition and justifies its classification as a definite type of endocarditis.

Of the eleven cases referred to in this paper, the shortest course was 14 weeks, and the longest eight months, the last named patient going to bed on Christmas day, 1921, and died Aug. 26, 1922.

The onset is usually insidious and it is often difficult to determine just when the disease begins, this being equally true of the hospital patient who often does not come under observation until late, as well as the private patient who is in close contact with his physician.

The onset symptoms noted are a feeling of lassitude, vague pains, loss of appetite, chilliness, vertigo, headache, cough, and less often symptoms pertaining to the heart affection.

The distinctive feature of all cases is the fever, which is a constant accompaniment. Because of the insidious onset it is not improbable that patients go about during the early stage attending to their regular duties and not realizing that they are sick.

It is during this early stage that the thought of tuberculosis, sub-acute rheumatism, mild sepsis, malaria, or typhoid infection is often considered.

In explanation of the clinical symptoms the following is suggested:

1. Those due to the infection and resulting toxemia, producing fever, anemia, exhaustion and enlarged spleen.

2. Those due to the endocarditic changes as the breaking off of particles from the affected valves and endocardium, and leading to petechia, tender cutaneous nodules, clubbing of fingers, embolism, purpura, later renal phenomena, while definite cardiac symptoms are singularly rare.

Although fever is a constant phenomena it is very variable being often irregularly intermittent, again intermittent; some cases have little or no fever, again appearing in waves remaining at 103-104 for weeks, and towards the end of the disease it may be absent for several weeks. Sweating is frequently noted during the early period of the disease.

As clinical signs of renal disease appear a rise in temperature results. complications such as embolic phenomena cause a sharp rise; chills also occur with embolism, and again with splenic infarctions.

Certain forms of therapy influence the fever curve, as intravenous injections of salt water, drugs like cacodylate of sodium, blood transfusions, all of which may produce a sharp rise, and again cause a drop to normal for several days, the latter often arousing false hopes as to the efficacy of the therapeutic remedy.

Splenic enlargement is a common symptom and the palpable spleen is an early distinctive clinical sign of this septicemic condition.

As embolic infarctions occur in the spleen, chills and sudden rises of temperature develop and this occurrence also explains the acute pains frequently noted in the left side of the chest and abdomen. With the development of infarcts the spleen usually undergoes some increase in size and its palpation becomes more painful.

Blood changes are a constant feature but vary greatly in nature; although anemia is a distinct characteristic of this disease, and the reduction in hemoglobin and red cells is often very marked, yet the true blood picture of pernicious anemia rarely develops. The leucocytes may be normal in numbers, again increased, or below normal. In the subnormal counts the lymphocytes are proportionately increased, while in the cases with lencocytosis the polymorphonuclears usually predominate.

The anemia is probably due to the destruction of the red cells by the circulating streptococci even though they are presumable anhemolytic in nature, and it is also likely that the systemic infection and toxemia affect changes in the bone marrow and thus tend to lower the functional capacity of the blood making structures.

The cutaneous phenomena are particularly characteristic and easily of greatest diagnostic import. They may be presented as changes in color, the appearance of petechiae, erythematous eruptions, purpura and painful cutaneous nodules.

The pallor of the face is a striking feature, to

which is added a tired look, and as later a pigmentation is manifest it gives to the face a brownish tinge usually referred to as "cafe au lait" color.

Purpura so frequently seen in severer types of septicemia is comparatively rare in this disease. Erythematous rashes are likewise rather infrequent. Petechiae on the other hand are a more important symtom and are present in 80 per cent of the recorded cases. They are usually discretely distributed and only during the terminal stage of the illness do they become more extensive, resembling the petechial eruption peculiar to other severe systemic infections and intoxications. These petechiae are usually of short duration and as they fade leave a yellowish brown stain.

By far the most interesting of the skin phenomena are the tender or painful nodes first described by Osler, and often referred to as "Osler's nodes" which are seen in 50 per cent of the cases. According to Osler's first description these nodes appear at intervals, more frequently on the tips of a finger, also on the pads of fingers and toes, consisting of slightly swollen areas varying in size from that of petechiae to one and one-half cm in diameter, of vivid pink hue, with slightly opaque centers. They are distinctly painful particularly to the touch.

They are not hemorrhagic and the area is not pigmented after they disappear. The best explanation offered is that they are caused by the lodgement of minute emboli near the skin.

It is a common remark of the patient at the morning visit—"Doctor, there is a new tender red spot on the finger or toe (as the case might be) this morning."

These principal cutaneous phenomena are to be distinguished from the lesions on the palms of the hands, inner sides of wrists and soles of the feet found in more acute forms of endocarditis.

Another interesting symptom is the clubbing of the fingers which is probably frequently misinterpreted. The sign is commonly believed to be a part of chonic valvular disease or congestion. While this is often true of congenital heart disease, in the adult affected with a chronic valvular lesion, the development of clubbed fingers is more likely to indicate an infection.

Aside from the embolic phenomena associated with certain skin lesions, vascular embolism constitutes one of the main clinical features of the disease. It occurs either as pure embolism or embolic aneurisms.

The splenic infarctions so frequent in this disease as well as the terminal glomerular nephritis are further expressions of embolism.

Pain as a symptom occurs in various forms. Of these tenderness over the lower end of the sternum, first noted by Libman in 1910, is distinctive of this disease. It is not necessarily a part of the attending anemia, because it is noted before anemia is manifest.

Pains may be felt in other bones as the sacrum and ischium. These are often indefinite and only occasionally localized in a particular bone, joint or muscle area.

Headache is a frequent symptom. Add to these the painful cutaneous nodes and we have a series of painful symptoms that readily direct the diagnosis in various channels.

Except for the fundamental significance, the cardiac symptoms are among the least prominent of all. The presence of an existing valve lesion is very helpful in determining the diagnosis of the disease under discussion, but it is unusual for any new murmurs to develop in the course of the disease. Often they become louder, again they undergo variations during the illness, being louder at one time than another; tachycardia may occur with the increase in fever and general taxemia, but other pulse changes as arhythmia are rare. Electro-cardiogram changes have not been noted. Pericarditis is rare. The usual signs of myocardial insufficiency are not manifest as a rule until the latter stages of the illness.

Renal symptoms become manifest through changes observed in the urine. Soon after the fever is well established an albumenuria is frequently noted, which is often transient; later in the disease red blood cells appear in the sediment, and with their appearance the albumenuria becomes more marked and hyaline and granular casts are present.

The studies of Gaskell and Baehr suggest that acute glomerular nephritis is characteristic of sub-acute bacterial endocarditis, and as such is usually a part of the later period of the disease and of unfavorable prognostic significance.

The patient usually succumbs as a result of the progressive anemia and exhaustion, incident to the continued septicemia, plus the development of complications as embolism, particularly inter-

cerebral with cardiac failure and disturbed renal function, so that pulmonary and visceral congestion with uremia and coma frequently close the scene.

In summarizing the clinical picture, it is clearly evident that in this group of cases, the symptom complex is of such constancy as to justify the classification as a separate disease.

The insidious onset, long continued fever, during which time, except in the terminal stage, the patient does not seem critically ill, a pre-existing valve lesion, enlarged spleen, anemia, clubbed fingers, characteristic cutaneous phenomena as the painful nodes, and finally the further symptoms of embolism and acute glomerular nephritis, with the demonstration of anhemolytic streptococci or similar micro-organisms in the blood stream constitute a picture that should be readily recognized by simple bedside observation.

The pathological anatomic changes, noted at autopsy are a further criterion that we are dealing with a disease process different from other forms of endocarditis. Aside from the changes incident to the pre-existing valve lesion there is a tendency for the process to extend downward and involve the wall of the ventricle in the case of aortic lesions and extension on the wall of the auricle, with involvement of the chorda tendinae in connection with mitral lesions.

The mural endocarditis is often more extensive than that affecting the valve surfaces, which probably accounts for the fact that auscultatory phenomena change so little during the course of the disease.

This is a distinctly fatal disease, and but a comparatively small number of recoveries have been reported. Libman reports four recoveries, and T. J. Horder about the same number. In our series of eleven, there is one patient who has been fever and bacteria free for seven months, so that a recovery may be considered.

Cases have been reported that succumbed to exhaustion and embolic complications after the fever had subsided, and the blood was bacteria free.

Libman has reported definite healing changes observed postmortem in affected valves, and the mural endocardium, so that evidence prevails that healing of the diseased area does exist.

In one of our cases the autopsy revealed a distinctly healed area on the mural endocardium, and could be related to a seven weeks course of fever experience three years before the last illness.

Since this in distinctly an infective process and in many instances due to a particular micro-organism, it is but natural that some form of immunal therapy should be considered. Unfortunately all forms of vaccine treatment have not been attended by any appreciable results. It has been proposed that the transfusion donor be primarily immunized with the causative streptococcus before the blood transfusion is made, but of this method no extensive results have as yet been published.

Capps has recently reported four recoveries in a series of eight cases to the extent that the four patients were bacteria and fever free for periods varying from six months to two and a half years, as the result of the long continued use of arsenic in the form of cacodylate of sodium. In the one case the apparent recovery in our series, we are inclined to attribute the result to this remedy which was used intravenously in rather large doses.

Two reasons are given for the use of arsenic in this form of septicemia; first, it is known that arsenic is retained for a long period in the sera and other body fluids, and second, laboratory demonstrations indicate that the growth of low virulent streptococci are rapidly inhibited by weak arsenical solutions. It is therefore a form of therapy that deserves a good trial in every instance.

Considering the great mortality of the disease, the question of preventive measures for which Horder made a strong plea in his early paper of 1909, should receive prominent consideration. If there was a way to prevent acute rheumatism, most of these cases would not occur. Libman states that three-tenths of the deaths in cases of valvular disease, as shown by the records of Mt. Sinai Hospital, New York City, were due to the superimposed streptococcus and influenzal endocarditis. Noting further the tendency to attack principally young adults and mainly the individual with heart disease, who as yet has shown no signs of cardiac failure, we recognize the great role of prophylactic measures in this condition. It clearly indicates that every young adult with valvular disease should be rid of all ascertainable focal infections as contained in teeth, tonsils, sinuses, gall bladder, appendix, uterus and adnexa, and urinary tract. Furthermore the need

of keeping vitality at its best, developing immunity in every possible way and the prevention of any acute infections should always be borne in mind.

Careful attention to these facts in cardiac clinics, dispensaries, and in daily practice, will do much to control this disease.

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NITROUS OXIDE-OXYGEN-ETHER ANESTHESIA IN TONSIL OPERATIONS*

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The technique to be described for the administration of nitrous oxide-oxygen in combination with ether is not entirely new, but was developed upon the original work of H. E. Boyle[1] and has been used with success, not only for nose and throat operations, but for general surgery as well, such as goiter work, carcinoma mammae, empyema, tuberculous glands of the neck, amputations, prostatectomy, pelvic abscess drainage and like cases where deep anesthesia is not necessary and where a comparatively large amount of ether is not desired or is contraindicated.

Technique: A preliminary injection of morphin and atropine or scopolomine is given one half hour before operation, the dosage depending upon the age of the patient, character of the operation (whether simple snare or enucleation), and condition of the patient. The usual dose is 1-6 gr. morphin and 1-120 gr. atropine, and in children under 10 it is advisable not to use the preliminary hypodermic at all. The anesthetist should be calm and no unnecessary noise should be permitted in the room. The patient is told to go to sleep without effort, and then a wet pad of cotton is placed over the eyes. Nitrous oxide-oxygen is introduced into the bag, using not over 12 per cent. oxygen, and the nasal inhaler applied. After a few breaths the oxygen is discontinued and the exhaling valve closed, so that the patient rebreathes from the bag. The gas is given under slight pressure as suggested by McKesson[2]. As soon as the patient is unconscious, ether is admitted by allowing the gas to pass through warmed ether for a few seconds. A relaxation is felt at the jaw almost immediately (and the relaxation is complete even in robust men), and the ether is then discontinued, allowing only that which is in the bag. The mouth is then opened by a gag, the patient turned on the side to permit blood to flow from the mouth and the head slightly lowered. This is important, as nitrous oxide causes more swelling of the respiratory tract and increasing the volume of respirations per interval of time[3] so that there is greater danger of blood entering the larynx than with ether. The anesthetic is continued until the tonsils have been removed, then the inhaler is removed and the adenoids extirpated, the patient's head being immediately turned with the body on the side. At this point the patient is usually awake, and can expectorate any blood that collects in the mouth. The patient should not be cyanosed during the anesthesia, nor should the respirations be sterterous or a pallor manifest itself. These are signs of too much anesthetic or too little oxygen and indicate a bad anesthetic.

The Advantages: 1. The patient wakes as soon as the operation is completed, thus allowing any blood to be expectorated, although position is to be relied upon more than the patient's coughing reflex. The patient is returned to the nurse in the room in better condition and the patient's well being after the operation is wonderfully augmented.

2. Very little ether or nitrous oxide is used, hence very little damage is done to kidneys, heart or other structures. As little as 40 gal. N_2O has sufficed for an hour of anesthetic time and not over ½ oz. of ether is used in the same period.

3. The ether acts synergistically with the oxygen to overcome any depressing action of the

*Read at the October, 1921, meeting of the Midwestern Association of Anesthetists at Kansas City.

nitrous oxide, thus making this method particularly safe for weak or septic cases, endocarditis and nephritis subjects, various lung conditions, such as emphysema, edema, tuberculosis, abscess and goiter cases.

4. With the addition of the ether to the mixture the operation can be prolonged as long as necessary, thus allowing dissection and enucleation operations to be performed that would not be possible under straight nitrous oxide-oxygen anesthesia.

5. Complete relaxation is obtained with almost instantaneous return of the coughing reflexes as soon as the anesthetic is stopped, so that danger from asphyxia due to inhaled blood is minimized.

6. The dosage can be regulated to a fine point, not only as to the N_2O and O, but the amount of ether as well when the anesthetic is to be prolonged as in general surgery.

7. There is no great rise in blood pressure, hence the method is useful in heart cases and arteriosclerotics.

8. There is practically no post-operative vomiting, and that found is due to swallowed blood. The patient can be instructed not to swallow and so obviate this, which cannot be done with deep ether anesthesia.

9. There is no weakening of the powers of the patient's resistance as with straight ether, hence less danger of pneumonia, lung abscess and other infections.

10. The amount of bleeding seems to be less, especially post-operative, due probably to the increased coagulation time of the blood induced by the CO_2 rebreathing and the nitrous oxide itself.

11. It combines the good points of N_2O anesthesia: i. e., quick induction, quick recovery and lessened after effects, with the ones of ether: i. e., relaxation, stimulation of respiration and circulation, and freedom from dangerous effect, the patient being further removed from the lethal anesthetic point than if ether were not used.

Disadvantages and Dangers: 1. The anesthesia is not as profound and if hemorrhage is encountered the fact that the patient is awake makes it more difficult to manage the case.

2. Some patients do not take the anesthetic smoothly, so that there may be a brief struggle when the ether is introduced, but this can be obviated by taking slightly more time in induction.

3. Dark skinned individuals, hard drinkers, and nervous women do not make good nitrous oxide-oxygen patients and the same may be said in the use of this technique.

4. This method should not be used except by an anesthetist thoroughly familiar with all the details of nitrous oxide administration and should never be given except in a fully equipped operating room, with a modern apparatus, and the patient must be examined prior to operation so that his true status is known.

5. In case of arterial bleeding in the tonsil fossae, it is sometimes difficult to keep the patient asleep long enough to ligate, but since this is very seldom necessary it can be overlooked.

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PENETRATING INJURIES TO THE EYE IN INDUSTRIAL OPERATIONS

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The eye may be penetrated by steel, copper, wood, glass, etc., and the object drop out, be winked out, or be drawn out by a hand, leaving behind it injuries that are more or less serious, and too numerous in character to be separately enumerated. The penetrating object may enter through the closed lid, cutting or not cutting the tarsus, or it may enter the eyeball direct, and either remain in the globe or come out of itself, or be removed by other agencies. Of course, those objects that penetrate the eyeball and come out without operative interference are almost invariably long, spindling foreign bodies, too long in fact to enter the ball and be concealed within its walls. The treatment consists in the removal of the invader (if it has not already been done), antiseptic cleansing, and the care of conditions as we find them, remembering that hardly any two of such accidents will be exactly alike. We may find perforation of the sclera or cornea, prolapse of the iris, cataract, intra-ocular hemorrhage, etc., all of which conditions must be cared for in the manner understood by experienced ophthalmic surgeons. All of such condi-

*Read before the Chicago Society of Industrial Surgeons, January 8, 1923.

tions may also exist if the foreign body is small in size, and has not only penetrated the eyeball but has also remained inside its walls.

I may as well say at the outset that I believe all cases of invasion of the eyeball by a foreign body should be submitted to an experienced x-ray practitioner. The presence or absence of a foreign body should be *positively* known, as well as its size, shape and location. Only good and clear pictures should be accepted, as very much hangs on their verdict, and I have known poor pictures to be shamed by good pictures, which disclosed the presence of a foreign body—undiscovered by the former. I require a front view and a side view, and, after I have seen and studied these, I do not as a rule feel the necessity of further localization. I say nothing *against* localization, and in some few cases it is most desirable, and even a necessity. I refer particularly to those cases where it is questionable whether the particle has gone clear through the eyeball, and is outside of the sclera, and perhaps in the cellular tissue of the socket. The knowledge of such a position is evidently of extreme value, for, as a rule, such cases are best let alone, so far as magnet or other withdrawal is concerned, unless the piece is of such large size as to render it dangerous to leave alone; in which case the severance of one of the lateral recti muscles, the pulling forward of the eyeball, the removal of the foreign body by forceps, etc., the replacing of the parts, etc., or the performance of the Kronlein operation must be taken into consideration. In some cases, where there is a doubt as to whether the particle is in the lens or not, exact localization is of value, but, as a rule, if I can have good clear side and front x-ray pictures, I feel satisfied to proceed with my operation. I believe that practically all that is really essential to know is, in which quadrant of the globe is the foreign body located? With this knowledge in hand, the exact line for line location of the particle is unnecessary. The interior of the globe is not a vast chamber at the worst, and a strong magnet introduced at either desired quadrant should be able to withdraw a piece of steel without difficulty, unless it is tightly buried in the sclera, under which circumstances we might have difficulty in acquiring success, even with exact localization.

Of course there are other foreign bodies that invade the eye besides iron and steel, and these are particularly unfortunate cases. As magnetic attraction has no influence over wood, copper, glass, etc., these cases are almost hopeless. Exact localization is important, as the foreign body will have to be removed with forceps. The pupil should be dilated, as the operator must work with ophthalmoscopic observation, provided the invader is in the vitreous chamber. I have from time to time removed such particles, located in the anterior chamber or lens, through the cornea with success, but have invariably failed in saving the eye where I have entered the vitreous chamber through the sclera. I have, I think, twice removed the foreign body, but in every instance the eye has been lost, although I note some success in other operators' reports. I believe, however, that the attempt should be made, and I presume that some successes will be attained. I believe that a very small pair of Noyes Alligator Nasal Forceps is the best instrument for withdrawing the foreign body. They only open at the end and, therefore, no traction is made on the scleral wound. Of course, of all substances, glass is the most difficult to see, either with the x-ray or otherwise. It would also be the most difficult to withdraw, but, fortunately, its presence inside of the eye must be extremely rare, for, in a rather large experience in injury cases, I have never seen even one instance of such an accident.

The subject of foreign bodies inside the eyeball practically resolves itself into a consideration of steel or iron particles. Fortunately, such particles are removable with the magnet, with the single exception of manganese iron fragments, and these are rare.

Much has been written on this subject, and diverse views are entertained by competent and honest surgeons. I feel constrained to give *my own* views, leaving it with the operators to choose between *my* methods and the methods of others. I am not willing to adopt the dictum of Haab and others, that practically all foreign bodies should be removed through the cornea. In the first place, there are but few genuine, powerful Haab magnets in this country, and it sometimes requires enormous magnetic attraction to pull a piece of steel from its firm bed in the posterior sclera to the anterior chamber. Besides this, I cannot believe it a good plan to pull a good-sized, jagged piece of steel through the lens, iris, ciliary processes, etc., in order to deliver it through the

cornea. Of course, Haab lays out a most attractive itinerary, or route, for the removal of the steel, by which it may be delivered into the hands of its captor without much damage to the eye. The steel (according to Haab) is to be coaxed along the floor of the vitreous chamber, and to be *very softly* carried over the sensitive ciliary processes. It should then pass through the circular ligament of the lens without doing any particular damage, and then be lifted over the wall of the iris, over the pupillary opening, and then dropped on to the floor of the anterior chamber, from whence it can be extracted by a corneal incision and the magnet. This sounds almost like a fairy tale. It can be practically done by an expert, if the object is very small and comparatively smooth. In my opinion, it *cannot* be done, *even* by an expert, if the object is large and sharp. What usually happens is, that the powerful magnet is approached to the eye, when, *"Bing,"* the object presents itself against, and sometimes through the cornea, carrying with it various portions of the internal anatomy of the eye. I believe that in recent injuries, where the cornea is still open, and where the lens is already cataractous, the foreign body may quite properly be withdrawn through the original opening, which may have to be somewhat enlarged, but, where the corneal wound has healed, and especially where no cataract is present, the posterior, or scleral, route should be utilized for operation. I have laid down the rule that the corneal, or anterior route, should only be used where the foreign body is *in* or *anterior to* the lens. All other particles should be withdrawn through the posterior, or scleral route.

Some surgeons believe that if the foreign body is in the lens, it should be left alone, as the lens has no sensory nerves, and the case is practically safe. In this view I do not agree. Such cases sooner or later come to grief, and I believe it is wiser to remove all intra-ocular foreign bodies, wherever located, as soon as possible, provided it can be done without almost irretrievable disaster to the eye itself. Fortunately, many pieces of steel that enter the eye come fresh from the fire and are aseptic, or they are rendered aseptic by heat derived from the friction of a hammer blow or the rapid propulsion through the air. Nevetheless, they should be removed as speedily as possible.

If the foreign body is located in, or anterior to the lens, it can usually be removed by the magnet through a corneal opening of appropriate size. I believe, if it is in the lens, and does not come out readily, it is better to wait a few days, until irritation has subsided, and then make a conventional cataract operation, removing both lens and foreign body. Care should be taken that the foreign body is *actually* removed, to which end, the magnet, anterior chamber flushing, etc., may be necessary. I believe the results are better in such cases if the lens removal is preceded by an iridectomy. I believe that a serious mistake is frequently made in operating on traumatic cataracts, in assuming that a small keratome opening is sufficient to afford free exit for the lens matter. Such lenses are seldom as liquid as we are led to expect. Many of them are quite substantial and cannot escape except through a fairly large opening. A cataract incision, whether for a senile or a traumatic cataract, should be ample, to avoid vitreous escape, or enlargement of the wound with scissors, both of which always lessens the percentage chance of a good recovery. Besides this, in almost all such cases, the anterior chamber irrigator will have to be used to flush away all possible lens material, in order to lessen the chances of an iritis. For this purpose, a fairly large opening is necessary, not of course as large as for a senile cataract, but fairly large. A Graefe cataract knife may be used, or a large keratome, although the latter requires more force than a Graefe knife. Fisher's retractors are better than a speculum, for they lessen the liability to lose vitreous. Very little pressure on the eyeball should be used by spoons, etc., for in these traumatic cases the hyaline membrane and posterior capsule are usually broken and the vitreous escapes easily. If considerable vitreous is lost, its place should be supplied by the injection into the posterior chamber of enough warm normal salt solution to fill out the globe. This solution should always be on hand in such cases, ready to be used in case of necessity.

If the foreign body is in, or anterior to the lens, it is frequently easy to hold the magnet to the eye, before a corneal incision is made, and attract the object to the floor of the anterior chamber, from whence it can be easily extracted by an incision made at the *very bottom of the chamber,* and the magnet. If the incision is made above the floor of the chamber, the inter-

vening corneal wall may prove quite an embarrassing obstruction for the magnet extraction. The foreign body may pull iritic tissue with it in process of its exit. If the iris is easily replaced, and stays replaced, it may be well to leave it, but, if it proves obstinate, an iridectomy had better be made. If the lens is broken down and soft, the opening should be large enough to facilitate lens removal by pressure, spoons, anterior chamber flushings, etc., in order to forestall, if possible, lenticular swelling, iritis, etc. The removal of intra-ocular foreign bodies is very interesting work. Each case must be judged by itself, and no hard and fast rules can be laid down for the management of all cases. Experienced skill, judgment and mental flexibility are the most important elements leading to success.

Let us now consider those cases where the foreign body is in the posterior chamber. The point of entrance may be through the cornea, sclera, or sclero-corneal junction. If it enters through the cornea, all sorts of corneal, iritic or lenticular damages may be present and each case must be judged by itself and treated accordingly. I have elsewhere recorded, and wish to record again, that I have seen one or two where minute steel fragments have passed clear through the cornea and *lens* without leaving any evidences of cataract behind. This seems well nigh impossible, but it is true nevertheless. One case, I remember distinctly, where a minute particle passed directly through the lens, leaving a minute track behind. This tract subsequently cleared up, and a perfectly clear lens resulted. If the point of entrance is through the sclero-corneal junction, the damage may be similar, but it must not be forgotten that this particular territory is the most sensitive in the eye, and that injuries here are especially apt to produce sympathetic ophthalmia, and protracted and unsatisfactory recoveries. I wish to say, however, that while I do not deny the existence of sympathetic ophthalmia, and have the greatest dread and respect for it, nevertheless I can truthfully say that, after a long and active experience, I am sure I have never seen six of these cases. So I cannot be blamed for feeling that the prevalence of this dreadful disease has been very much over-estimated. If the foreign body enters through the sclera, it frequently happens that very little damage is done, and certainly, as a rule, there are very few external evidences of trouble. A scleral wound, and a soft eyeball, are perhaps all the visible pathology present. Of course, some cases of steel invasion, no matter where the point of entrance occurs, produce such profound trauma that it is immediately evident that the case is hopeless from the start. Under these conditions, enucleation should be advised at once; thus saving time, money, and shattered hopes, protracted illness, and semi-invalidism, to say nothing of the possibility of sympathetic ophthalmia. Frequently patients will not consent to such prompt surgery, but the advice should be recorded in writing, which may become useful in the future, for it must be remembered that all such cases are potential plaintiffs in legal proceedings.

After a foreign body has entered the eyeball through the sclera, or for that matter through any other route, a thorough examination should be made. The pupil should be enlarged, and the anterior portion of the eye examined under illuminated magnification. If possible, the interior of the eye should be carefully observed with the ophthalmoscope, the x-ray, and possibly localization should be employed. I do not, as a rule, believe in what might be called *magnet diagnosis.* That is the approach to the eye of the strong magnet to see if the steel shows itself, or if the patient experiences any pain. Complications are likely to occur, under such a means of investigation, that will greatly embarrass the surgeon, and lessen the patient's chance of obtaining a good eye. The magnet should not be used until all the evidence is in and the plan of campaign clearly understood. We should be guided by our x-ray pictures when the eye is opened. I am, of course, now speaking of operations through the scleral, or posterior route. The incision should be either between the superior and external recti muscles, or between the external and inferior recti muscles, or between the inferior and internal recti muscles, or between the internal and superior recti muscles. In other words, in one of the four quadrants of the eye, indicated by the x-ray as the quadrant nearest the location of the foreign body. I pick up the conjunctiva, after local cocainization, near the sclero-corneal junction with forceps, and cut the apex of the conjunctival fold with scissors. I make a slender triangular flap, way back to the cul-de-sac. I close and spread the scissors beneath the flap, so as to thoroughly dissect the conjunctiva from the sclera. I lay back the flap,

and I then plunge a Graefe cataract knife through the sclera, far enough back to avoid cutting the ciliary processes. This incision is enlarged backward, at an angle of about 45 degrees, for nearly one-half an inch, in order to provide plenty of room for surgical procedures and for the withdrawal of the foreign body. If the latter is very large, it may be necessary to enlarge the opening with scissors. If the entrance of the foreign body has made a scleral opening, that is still open, it is often wise to utilize this opening, and enlarge it for the operative procedures. After the opening is ready, the magnet—with its strongest point—should be placed in the open wound. I have devised two little non-magnetic hooks that I place—one in each side of the wound—to open it, that often seems to facilitate the withdrawal of the foreign body. They are held by an assistant. It is needless to say that all instruments used in this operation should be non-magnetic. The point of the magnet should be aimed, as near as possible, at the long axis of the foreign body, as shown in the x-ray pictures, for objects are much more readily and harmlessly removed in this way than if the magnet is aimed broadside at the object. We must from time to time be *sure* the magnet is working, by holding perhaps a pair of scissors toward it to see if the current is on full strength. I have seen failures occur from neglecting this precaution. Sometimes the foreign body fails to present itself at once, it may be stuck in the sclera, or covered with exudate. The current should then be switched on and off, on and off, etc., in order to jerk it loose. It may be well to give the patient a rest occasionally, and remove the speculum from the eye, and then go at it again. If, after giving the case a prolonged trial, and no foreign body is removed, we shall have to consider the advisability of introducing a magnetic point inside of the eyeball, as close to the location of the foreign body as we can judge. This is a procedure that some surgeons do readily, and more or less fearlessly. I cannot agree with this point of view. I regard the introduction of a magnetic point inside the eyeball as an exceedingly hazardous procedure, only to be done as a last resort, and after all other methods have failed. If, however, it becomes necessary, it should be done with exceeding gentleness and care, and for not more than (let us say), three times. The current should, of course, be on in full force when the point is withdrawn, as otherwise the foreign body might be stripped off at the moment of withdrawal. I have removed some foreign bodies in this way, when other means had failed, but I always felt I was indulging in a dangerous practice. Very occasionally more than one piece of steel will come away. Whether a plurality of pieces entered at the intial entrance, or whether a single piece has broken up into several pieces after entrance, I cannot say, but I believe in the latter view. If we do not succeed easily in withdrawing the foreign body, we should patiently persevere until success or failure is assured. I have sometimes found, in obstinate cases, that the foreign body can be moved by placing the strongest point of the magnet as far into the conjunctival culde-sac as possible, at the point where the x-ray has located the foreign body, and then gently and slowly move the magnet down to the scleral opening, "milking" the eye—as it were. This can be done several times, in different locations, and should always be done before a magnet point is introduced inside the eye. I believe that more strenuous methods of procedure, other than those I have indicated in this paper, are unwarranted, and would result in the loss of the eye, almost without exception. I am not unaware of the dangers of removing foreign bodies through the scleral, or posterior route. Detachment of the retina, intra-ocular infections, loss of vitreous, etc., may of course occur, but these risks seem to me trivial as compared with the dangers of dragging a foreign body through and over the delicate and sensitive anatomical elements found in the anterior portion of the eyeball.

After the foreign body is removed, or we are resigned to failure, the wound is closed. Do not stitch the sclera; it is unnecessary, and, as the sclera is thick and tough, considerable pressure is used in getting a needle through both lips of the incision, and vitreous may be lost. Besides this, part of a suture would of course be left in the vitreous chamber, which would invite intra-ocular infection if left (as with a catgut suture), or if removed (as with a silk suture), stitching the conjunctiva is sufficient. The apex of the conjunctival flap is so near the sclero-corneal junction that there is not enough conjunctiva to retain a suture. I, therefore, draw the flap forward, and suture the conjunctival triangular and tongue-shaped flap to the conjunctiva left on the eyeball, one suture above and one below. This

will be quite sufficient. I use very fine silk sutures. The recovery after the operation is usually uneventful. The sutures may be removed on the third or fourth day. Of course, some of these cases speedily go to the bad, through iritis, panophthalmitis, etc., and enucleation becomes necessary. Others apparently do well for weeks or months, and then atrophy of the globe, intraocular pathologies, etc., occur, and the eye becomes useless, and may have to be removed. Sometimes the eye is permanently saved, with more or less vision. No one can tell the ultimate result even in those cases that appear to be exceedingly successful. I have learned to maintain a guarded prognosis until about a year has elapsed. If *then* the result is good, I feel optimistic, but not until then. The trauma and insult to the eye are great where a piece of steel has passed into perhaps the vitreous chamber. It is still more so when the steel is removed by a magnet, and still more so when perhaps further operations, like a cataract or an iridectomy, have to be performed. We must not be surprised, therefore, when so many eyes ultimately succumb after undergoing all these hardships.

The question as to what magnet is used is one that most surgeons view from the standpoint of their own experience. The genuine double-ended Haab magnets are very expensive and scarce in this country. They are the most powerful magnets made, and perhaps the best for general use, although, when a magnet point is to be introduced inside the eye, I think some strong hand magnet—like Sweet's—is the best, as it can be more easily and delicately handled. Several substitutes for the Haab magnet have been introduced in America, like the one manufactured by the Victor Company, for instance. Heavy magnets, like the one devised by Haab, etc., are best regarded as stationary instruments. In other words, the patient should sit and approach the instrument, whereas, in using hand magnets, the patient lies on the table and is approached *by* the instrument. I think on the whole that better work can be done by using a very strong hand magnet, such as Sweet's or Lancaster's, that combine power with flexibility, than by using a fixed magnet such as Haab's. I have used Sweet's instrument for years, and have been well satisfied with it. The chief objection to it is that it quickly becomes almost, if not quite, too hot to handle. I have covered it with an asbestos overcoat, but the heavy magnet slips in the covering and interferes with the accuracy of its use. I have had no experience with the Ring Magnet, and therefore can say nothing about it. It undoubtedly possesses great power, that can be graduated to conform with the necessities of the case, and the handles can be easily manipulated.

7 West Madison Street.

REMINISCENCES OF FORTY YEARS OF MEDICAL PRACTICE IN JO DAVIESS COUNTY, ILLINOIS*

I. C. Smith, M. D.

STOCKTON, ILLINOIS

Mr. President and Brother Physicians:

To be the honored guest of a society of medical men is surely a recognition that any man might well be proud of.

I will relate a few personal experiences during the forty years of practice in Jo Daviess County.

I understand that I am the oldest practicing physician in this county, both in age and in the years of practice.

On March 19, 1884, I located in the village of Morseville (Plum River P. O.), a little inland mining town of the old brand, located in the town of Stockton, with a population of about 150 or 200, twelve miles to our nearest railroad town, which was either Warren or Lena, on the Illinois Central Railroad.

A stage route from Freeport to Elizabeth was operated by John Morrow, making three trips a week, hauling mail, freight and many passengers. This route served Mill Grove, Yellow Creek (now Pearl City), and Kent, in Stephenson County, Plum River, Yankee Hollow, Stockton Center, Woodbine (or Jewels Prairie, as it was called at that time), and Elizabeth. Our roads at that time were mostly trails, except the main travelled roads, with scarcely any bridges over the small streams and not many over the larger ones. I did nearly all of my travelling on horseback, or a high-wheeled sulky. Had a pair of saddle bags in which I carried my medicines, obstetrical supplies, and everything we had to carry. Owing to the many streams we had to ford we could not reach our patients by any

*Read at a picnic given in his honor by the Jo Daviess County Medical Society and Dubuque, Iowa, medical friends at Camp Nineteen on the Mississippi River, August 9, 1923.

other method of travel, and many times I have gotten upon my knees on a saddle to swim a horse through a stream and keep my legs dry, and very often I have made trips into the country on foot, as I could go through the fields and shorten the distance and rest a tired horse.

I remember quite distinctly one night in the spring of '86, riding about eight miles south of Morseville to see a patient, and expecting to get home in the early evening, but when I was ready to leave word had been left that I was to go down the valley to the Carroll County line to see another patient. By riding through a thick timber a distance of a mile and then walking a mile I could save two miles each way on the trip. I tied my horse in a clump of bushes and walked to the house, and by the time I got ready to leave it had turned quite dark and began to rain. I thought that I could find my way back to where I left my horse by the snow bank, along the fence, but by the time I got to the place where I had left the horse it was so dark I couldn't see a thing, nor could I find the horse, and the rain increased until I concluded to feel my way along a rail fence about ten or fifteen rods to an old abandoned stone house. I finally did reach this house and felt my way along the side of the house till I came to the door, or rather where there had been a door. Stepping upon the threshold, I made another step and fell headlong into the cellar, as the floor and joists had been taken out of the house. I had read Indian stories where in the old trading posts and pioneer houses they would dig wells in the cellars so that they might have water should they have to remain blockaded, so I was afraid to move for fear of falling into a well. I could not reach the top or get hold of anything so I could get out, but I could see a place on the side of the cellar that seemed like an opening near where the door should be. I finally mustered courage enough to crawl on hands and knees, feeling cautiously every inch of the way, only to find the doorway packed with ice so solid I could not get a hole large enough to get through. I was getting quite chilly and very anxious to be on my way, so I went back to where I fell in and tried time and again to jump high enough to get a hold to pull myself out, which I finally managed to do. I went back to where my horse was tied and after prowling around for what seemed to be a very long time, I heard something snap as the breaking of a twig. I proceeded in the direction of the sound and found my horse. I mounted and lay my head on the neck of the horse, so as not to be knocked off by the limbs of the trees. The horse took me out of the timber to the road where there was a school house, so I stopped here, pried a window open, and as there were a few coals burning in the stove, built a fire, put the horse in the woodshed, and after getting partly warm, started for home, arriving somewhat exhausted at 5 a. m.

In winter I would carry a hand axe with me for the purpose of cutting fences, so that I might get through on night drives, which at that time were many. The majority of the calls would come at night about the time the family would decide Mary or Johnny were worse. Many times I have left my office at bed time and worked all night to get to a patient. They thought in those days, just as many do today, "Doc can make it," but it would be too bad for them to get out and help you through—they are not used to the exposure, and, besides, Doc gets paid for it. I remember one of those cold winter nights in December, raining hard all night, that Dr. Stealy, Dr. Stafford, with a nurse (now superintendent of the General Hospital at Freeport), and I drove from Stockton to Camp Creek, a distance of thirteen miles, arriving at a ford before daylight. I had crossed the ford the evening before and told Dr. Stealy, who was riding with me, that we would have to ford that stream a little farther down. He did not seem to think anything of it, so when we arrived at the ford I called back to Dr. Stafford and the nurse to put down the top and at the same time I lowered the top on my buggy. It did not look good to me, but we drove into the rushing water, which proved to be very much deeper than we had thought. Our horses were going through the ice and disappearing under the water, the buggy, team and all floating down the stream, high banks on either side with only a narrow cut to get out, and we missed that. The buggy, team, Dr. Stealy and I floated down stream a few rods, striking a fence which upset the buggy, and we were both fighting to get out. Ice cakes as large as three to four feet square and about ten inches thick would strike us and make us think that we were gone. I caught hold of the bows of the top and hung onto it, but an ice cake struck it, tearing off the seat, and we were carried

down the stream about fifteen or twenty rods, where I could touch bottom and worked to the bank. Dr. Stafford came running to me and, lying on his stomach, gave me a hand. Dr. Stealy was carried about twenty rods further down the stream, where a ravine entered the creek making a whirl in the current which threw Dr. Stealy on a bed of gravel, unconscious and helpless when we found him, with his arms and chest above water. We then took Dr. Stafford's team and put Dr. Stealy in the buggy and rushed him to a house about a half mile distant. The nurse and Dr. Stafford cared for him while I changed my clothes (which were furnished by the farmer at whose house we stopped). Dr. Stealy also got some clothes to put on after a few hours in bed. And during this time we hung our clothes around the stove and by noon found a place to ford through a field and went on and operated on a case of appendicitis. My team was found at about 10 o'clock with the front wheels of the buggy tangled up in a wire fence about three miles away. I could tell you of many other rather tough experiences, but I know all of you who do country work have plenty of them.

The first resection of a bone I ever witnessed was done by Dr. Caldwell in 1881. A farmer got tangled in an old-fashioned tumbling rod while threshing and tore his arm out of the socket. This operation was done by Dr. Caldwell of Freeport and Dr. Kerlin of Widows Grove. They used a spray of carbolic acid, which I held in a position to throw a continuous spray on the field of operation. The resection, however, did not prove a success as a few weeks later they amputated the arm. The man is still living. Dr. Stealy and I were students at this time in Dr. Caldwell's office.

Typhoid fever patients at that time were not allowed water except in spoon doses, and the older doctors would not allow the bowels to act unless voluntary, until after ten to fourteen days. We were cautioned to hold the bowels with opium. I remember of an old man with typhoid fever who escaped his attendants one night and crawled a distance of about ten rods from the house to a spring, lying on his belly and filling himself with the spring water, then fell asleep. When found by the neighbors (they did not have nurses in those days, and the neighbors took care of one another), he was too weak to rise. They immediately sent for Dr. Kerlin to come, but it was raining, so he told me to go, saying, "By gads, he is a dead one anyway, and there is no use of me going." Yet this man lived for years afterwards.

Dr. Caldwell's method of treatment at that time was very similar. In pneumonia the profession were still inclined to the blood-letting, and for many other diseases you were expected to be prepared to bleed. However, leeches and cupping were used more than general blood-letting.

A leech would draw about four times its weight of blood and the average weight of a leech is about one-half dram, or more. One ounce of leeches would be necessary to extract about four ounces of blood. Acute congestion of lungs when aeration of blood is impeded, with extensive stases on venous side, pulmonary hemorrhage when dependent, and acute congestion of the lungs, are relieved by an opening in the vein in the arm. The pain of acute pleuritis and acute peritonitis was relieved by bleeding, and many other pains were treated in this manner. Acute gastric, enteric and peritoneal inflammations were treated either by cupping or leeches. Typhlitis and peri-typhilitis, hemorrhoids and many other forms of inflammatory troubles were treated in this manner.

Aquapuncture and firing in nervous inflammation were quite a favorite method of treatment. Aquapuncture needles about three inches in length and having a red wax, hard rubber or metal head, are employed for this purpose. They are introduced by a rapid rotary motion.

Baunscheidtismus is a form of aquapuncture so named from its inventor. The instrument consists of a heavy disk, about one-half inch in diameter. Having inserted into it about twenty-five sharp needles, which are driven into the skin by pressing a button which loosens a spring, driving the needles through the skin. Then Croton oil or other suitable counter-irritants was rubbed into the wound; mostly used in tic-douloureux, sciatica, lumbago, etc. These methods were fast being discarded by the younger doctors at the time I began to practice, but we had to argue the point both with the older men in practice, as well as the laity (which was much like trying to teach your grandmother to suck eggs).

Tooth extracting was quite a part of the old-time doctor's work. One of the older doctors tried to extract a tooth for a very large man, whose teeth were very large and well set. He

failed to get the tooth, so the young man and several of his friends came over to the young doctor's office and I knew it was up to me to get the tooth, which I did, and also got quite a portion of alviola with it. I managed to pry the alviolar process loose from the tooth before exhibiting it to the crowd. The man's jaw healed nicely and never any more trouble from it. I felt then, as I have many times since, that nature is very kind to the doctors and patients in making reparation for errors.

We had the nerve to charge 50 cents for such work. The charges for O. B. cases either in the village or sixteen miles out were from $5.00 to $10.00—no mileage. However, I never charged less than $8.00 and on long night drives in the country as high as $10.00. The $10.00 charge caused considerable dissension among the people. Office work ranged from 25 cents up, sometimes even as high as a dollar; but it took a lot of powders and a large bottle of medicine to make the dollar charge. We charged a dollar a call in the village and 50 cents a mile for country driving up to five miles, after that 25 cents a mile, day or night. We carried about twenty different medicines and from them we tackled anything that came along. Opium, jalap, C. C. pills, calomel, Dovers, Epsom salts, castor oil, ergot, bismuth, ipecac, quinine, potassium bromide, iodine, sodium bicord, squills, carbolic acid, tartar emetic, vomica and a few others, and always had to have brandy.

A young doctor had a hard time making the older doctors realize that it was not a crime to try and locate in the same field, which the old man seemed to think belonged to him. You didn't get any support or encouragement from him, as a rule, yet I must say for Dr. Joseph Brown that he was a friend to me from the first. I think that our medical societies have caused a better and more fraternal feeling in the profession. At that time there was a medical society in the county, but it never flourished. I remember I was invited to attend a meeting at Elizabeth and read a paper in 1884 or '85. Dr. Phelps was secretary of the society, or at least he invited me to attend and read a paper. The county was without a medical society until the present society was organized in 1900 through the untiring efforts of Drs. Godfrey, D. G. Smith, Hutton, Stafford and a few others. Most all have passed over the unknown divide. I know no better way to express my views on the benefits of the medical society than to read an extract from the first annual address of the first president of the society, Dr. H. T. Godfrey:

"No man, be he ever so great, can afford to live alone; no man can evolve from his inner consciousness all wisdom and all truth, and no man, be he ever so learned, and his experience so great, but can learn something from his perhaps less experienced and less erudite neighbor.

"No two men look at any subject from exactly the same standpoint, and consequently the nearer we come to our fellow workers, and the freer our interchange of ideas and experiences, the better for us all.

"The medical society gives us the interchange of thought and experience. If it is rightly used it is a great educator for busy practitioners of our art."

We, as the Jo Daviess County Medical Society, owe much to Dr. Godfrey, who was the first president and continued president for several years. He could always be depended upon to do all he could or the betterment of the society.

To Dr. D. G. Smith, first secretary, who carried this burden for years, perhaps more than any other member of the society, we are indebted for the existence of the society. I know how hard he worked to keep up the interest in the society, making it the banner society of the state. Many others of the society were perhaps as much interested but had not the tact to do as much as this man along that line.

I have here a list of all the doctors registered in Jo Daviess County since 1887, when the Registration Act was passed. I find that quite a few doctors are not registered. Dr. Logan registered in 1912, and there were no entries since then, except Dr. Buford in 1922. I do not know where the fault lies, but several doctors located in the county since these, but no record.

Doctors have located in Stockton since 1884, including myself, and osteopaths and chiropractors galore.

I have arrived at an age where I feel like giving advice, but I know how much this free advice is heeded, so will refrain from doing so.

Not only did we older doctors have difficulties to overcome in the practice of medicine, but also in advantages at college, in equipment, etc. However, it is qualities that fit a man for a life of

usefulness, not the mental possession of facts. The educated man is the useful man. The successful man is he who can weld life and education together. Speaking of qualities, how would the scientific cultivation of this do, classified under three distinct heads: bodily qualities, mental qualities, and moral qualities?

Bodily Qualities—Health of digestion, circulation, breathing, manual skill and ease of handling all muscles of the body.

Mental Qualities—Painstaking, patience, decision, perseverance, courage, following directions, tact, concentration, insight, observation, mental activity, accuracy and memory.

Moral Qualities—Putting one's self in another's place, or thoughtfulness for others, which includes kindness, courtesy, good cheer, honesty, fidelity to a promise, self control, self reliance and self respect.

HEMATURIA WITH PARTICULAR REFERENCE TO ESSENTIAL HEMATURIA

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HARRY C. ROLNICK, M. D.

CHICAGO

By the term hematuria we understand the presence clinically of gross evidence of blood in the urine. Microscopic blood is usually not included under this term.

The urinary tract throughout is extremely vascular and is so readily subject to engorgement that practically any pathologic condition anywhere along the tract and many outside of it may be the cause for blood in the urine. Trauma, congestion, inflammation, ulceration, foreign body or growth may be the etiologic factors. Various constitutional and blood disorders and nephritis due to the ingestion or absorption of toxic substances that produce renal irritation may cause it.

When the patient notices blood in his urine or bleeding from the urethra he becomes worried and seeks immediately for relief and diagnosis. It may be well to mention that urates or bile in the urine may possibly be mistaken for blood but these conditions should offer no difficulty in differentiation.

The cause for the hematuria can usually be diagnosed by the associated symptoms and signs and the history of the case. Blood in the urine, however, may be the only finding. The older methods for determining the source of the blood such as: the color of the urine, whether dark or light red; the time of appearance of blood in the urine with relation to urination, and the shape of the clot are all unreliable.

The cystoscope has made possible the exact diagnosis of lesions of the bladder and also determines the source of the blood, if from the kidneys. In some cases, as acute nephritis, the diagnosis can be made without instrumental examination; in others, instrumentation is contra-indicated. Excluding these conditions a cystoscopic examination is usually necessary to establish a diagnosis.

In cases of uni-lateral renal hemorrhage it may be impossible to determine which kidney is the source of the bleeding, if the patient is cystoscoped after the hemorrhage has ceased. If other evidences are present, they help to establish the diagnosis, but often there are no associated findings to help one out.

We shall now consider a few of the conditions producing hematuria that may be of clinical interest.

Bleeding from the anterior urethra of any appreciable amount presents itself as a free flow of blood from the meatus. Most often the bleeding ceases upon slight compression of the meatus. Occasionally however the hemorrhage may be profuse and persist. Astringents injected are of little value here. The best way to take care of the situation is either to have the patient compress the penis tightly with his full hand or the bandaging tightly of the entire organ.

In suspected rupture of the posterior urethra following a direct injury to the perineum such as falling astride a hard object, the bleeding from the meatus may be severe and last for some time. The indications for treatment are definite. If the patient is able to urinate and no swelling appears in the perineum, the condition is simply one of contusion or tear of the urethral mucosa. Catheterization and instrumentation are unnecessary and are contra-indicated because of the added trauma produced. If the patient is unable to urinate and develops a swelling in the perineum—indicating urinary extravasation—perineal urethrotomy should be performed at once. Here also catheterization and instrumentation are contra-indicated. They merely add to the trauma and possibly spread infection. The only

time an instrument should be inserted is when doing a urethrotomy with the sound as a guide —such were the teachings of J. B. Murphy.

During the course of acute gonorrhea, the presence of blood at the end of urination, together with symptoms of posterior urethritis, indicates an increased severity of the infection and the congestion of the prostatic urethra. The patient should be put to bed and all local treatment should be discontinued.

Bleeding from the prostatic urethra in prostatic obstruction does not necessarily mean cancer of the prostate. It may occur with simple adenomatous prostate and be quite profuse. Following the hemorrhage, symptoms of obstruction and engorgement are markedly relieved.

Ulcers or tumors of the bladder, producing hematuria, are usually otherwise symptomless, if located outside of the trigone. An infiltrating carcinoma may cause very little bleeding while a benign papilloma may produce considerable hemorrhage.

In some cases of profuse bleeding from the bladder a cystoscopic examination may be impossible, for the fluid medium immediately becomes cloudy. If the bleeding is from the kidneys, a few washings allow for a clear fluid medium. This is a way of differentiating bladder and kidney hemorrhage.

Stones in the bladder may be located in a diverticulum or behind the prostate in prostatic hypertrophy and produce no bleeding and be found only upon cystoscopic examination, or when the bladder is opened.

Instrumentation within the bladder should be performed gently. The mucosa is very easily traumatized. I have many times found cystoscopically sub-mucous hemorrhages in the bladder of patients who have been sounded. In passing a sound, it is not necessary to get much beyond the right angle to be in the bladder; the handle of the instrument need not be depressed far down, also it is not necessary to rotate the sound to know that it has passed the cut-off muscle.

Contusions of the bladder region may be followed by hematuria. If the patient is able to urinate, rest in bed and sedatives is the only treatment necessary. Cystoscopy is contra-indicated—one may damage the bladder still more as a result of instrumentation and distention.

Injury to the kidney region, with hematuria following, even if quite profuse is in itself not an indication for operative interference, unless the patient is becoming exanguinated. If a tumor develops in the flank, together with the hematuria, it is an indication of considerable damage to the kidney, and surgery should immediately be resorted to.

Chronic urinary retention of considerable degree should be relieved only gradually. If a patient has 600 to 1,000 CC or more of residual urine, the sudden change in intra-vesical and renal pressure as a result of the sudden evacuation may be result in hemorrhage from the bladder and kidneys, and may also produce shock.

When constitutional and blood disorders and acute hemorrhagic nephritis are ruled out as the cause of kidney hemorrage, the diagnosis usually rests between tumor, stone and tuberculosis. In tubercular kidney the bleeding is rarely marked and the associated symptoms, together with bladder involvement make the diagnosis.

Stone in the kidney as a rule offers no difficulties—the x-ray findings are present in most cases together with pus in the urine and attacks of ureteral colic.

Hematuria is a prominent symptom in kidney tumor—a painless, apparently causeless hematuria in one past middle age is suggestive. If the tumor is small and not palpable, the diagnosis may be difficult. The pyelogram may help here. Encroachment of the tumor on the kidney calices will limit the outline of the pyelogram and is diagnostic.

One should not immediately turn to a diagnosis of essential or idiopathic hematuria if the above conditions can be ruled out. Other definite conditions may be the cause for the bleeding.

The onset of acute pyelitis may be blood, followed later by pus in the urine. A pyo-nephrosis may be another cause. Bleeding from one or both kidneys may be due to bacterial infection—bacillus Coli may be the cause for persistent bleeding that may last for weeks.

Undoubtedly the most common cause of the majority of cases that are diagnosed as essential hematuria is chronic interstetial nephritis—contracted kidney. There may be a unilateral chronic nephritis but this is not common. The bleeding in these cases, however, is usually unilateral. Bleeding from contracted kidney is probably dependent upon increased pressure within the kidney or the rupture of arterio-

sclerotic blood vessels. Twenty years ago Israel stated that chronic nephritis was the cause for most of the cases of undiagnosed renal hemorrhage. Careful blood function and urinary function tests, urinalysis and systemic findings will establish the diagnosis in most instances.

Other more obscure and uncommon causes for renal bleeding are: 1. Varix of the renal papillae; 2. Papilloma of the kidney pelvis; 3. Pyelitis granulosa and 4. Hemangiona cavernosum.

Since essential hematuria is a negative diagnosis, all steps should be taken to rule out all possible causes. Occasionally a kidney stone producing hematuria may remain undiagnosed for a long time.

However, when all has been said and done, there still remain cases of bleeding from the kidney for which, after the most thorough and painstaking examination, no cause can be found.

These are for the want of a better name, "The Essential Hematurias." It is an apparently causeless, usually painless hematuria, involving one kidney only, rarely both. Essential hematuria is also a clinical diagnosis, for although the pathologist may be able to make a diagnosis after the kidney has been removed, it may be impossible to make a clinical diagnosis with the methods at our command.

To limit these cases still further, numerous sections from various parts of the kidneys that have been removed as a life saving measure in persistent severe hematuria, time and again show nothing.

Numerous theories have been brought forth attempting to explain this condition. The most popular one is that it is due to an angio-neurosis and also that it is a pre-renal condition. There is some basis for the latter, for some of these cases are followed by a contracted kidney.

In these cases all the patient has is bleeding from the kidney with no other symptom or finding. The bleeding may last a few days, weeks, months, or even years. It may cease spontaneously and suddenly recur.

Various methods of treatment have been recommended and cures reported following the use of various drugs. Distention of the pelvis with astringent solutions or with air seem to offer best results.

The hematuria rarely responds to any treatment directed locally to the pelvis of the kidney or to internal hemostatics. When the hemorrhage ceases following treatment, the truth of the matter is that the bleeding would have ceased spontaneously. One may attempt everything possible without result of any kind and then find that the bleeding clears up of its own accord. The only thing one can say is that one must trust to God that the bleeding will stop.

The hemorrhage may persist for months and years, be intermittent and not be severe enough to produce much disturbance—this is the most common type seen. In these cases operative measures are contra-indicated, no matter how long the bleeding continues.

If the patient is becoming exanguinated and all measures, locally and systemically, have failed to give relief, nephrectomy, which can be the only operation considered, should be resorted to as a life saving measure.

It is always well to remember that the other kidney may begin to bleed later, so that nephrectomy should be done only as a life saving measure, for one may have the same condition to meet with later in the other kidney.

THE MEDICAL FRATERNITIES OF CHICAGO*

W. A. Newman Dorland, M. D.
CHICAGO

Chicago, in the last 30 years, has been a fertile field for medical fraternities. During that time many Greek letter chapters have been organized, some, it is true, destined to die an early death, but for the most part persisting to the present as thriving and effective organizations in the furtherance of college work. Today there are twelve medical fraternities in the city represented by twenty-eight chapters. These are distributed among the various colleges in the following proportion:

College of Physicians and Surgeons, the *Medical Department* of the *University of Illinois*:

1. Alpha Kappa Kappa, Eta Chapter, 46 Members
2. Nu Sigma Nu, Eta Chapter.....40 Members
3. Phi Beta Pi, Iota Chapter.....46 Members
4. Phi Chi, Upsilon Iota Chapter.....39 Members
5. Phi Delta Epsilon, Alpha Alpha Chapter .....43 Members
6. Phi Lambda Kappa.....26 Members
7. Phi Rho Sigma, Beta Chapter.....38 Members

*A report presented at the Biennial Meeting of the Grand Chapter of the Alpha Mu Pi Omega Medical Fraternity, Milwaukee, Wis., June 21, 1923.

COLLEGES

Fraternities.	*University of Illinois, College of Medicine*	*Northwestern University Medical School.*	*University of Chicago, Rush Medical School.*	*Loyola University School of Medicine.*	*General Medical College of the General Medical Foundation (formerly Hahnemann Medical College).*	*Chicago Medical School.*	*Chicago Membership of Fraternity.*
Alpha Epsilon Iota			Beta Chapter Established 1898 34 Members				34
Alpha Kappa Kappa	Eta Chapter Established 1899 16 Members	Xi Chapter Established 1901 41 Members	Nu Chapter Established 1901 45 Members				132
Alphi Phi Mu						Alpha Chapter Established 1912 41 Members	41
Alpha Phi Sigma	Established 1910 Absorbed by Phi Delta Epsilon 1918						
Nu Sigma Nu	Iota Chapter Established 1896 40 Members	Established 1891 49 Members	Kappa Chapter Established 1893 75 Members				164
Nu Sigma Phi			Beta Chapter Established 1902 17 Members	Epsilon Chapter (*Sorority*) Established 1902 10 Members			27
Phi Alpha Gamma					Eta Lambda Chapter Established 1894 23 Members		23
Phi Beta Pi	Iota Chapter Established 1901 16 Members	Theta Chapter Established 1902 44 Members	Delta Chapter Established 1900 38 Members	Alpha Omega Chapter Established 1921 44 Members			172
Phi Chi	Upsilon Iota Chapter Established 1918 39 Members	Kappa Rho Chapter Established 1920 46 Members	Rho Chapter Established 1905 79 Members	Phi Sigma Chapter Established 1906 40 Members			204
Phi Delta Epsilon	Alpha Alpha Chapter Established as Alpha Phi Sigma 1910 13 Members	Alpha Beta Chapter Established 1907 27 Members	Alpha Gamma Chapter Established 1903 40 Members				110
Phi Lambda Kappa	Established 1921 26 Members		Gamma Chapter Established 1921 9 Members	Gamma Chapter Established 1920 24 Members			59
Phi Rho Sigma	Beta Chapter Established 1894 38 Members	Alpha Chapter Established 1890 42 Members	Gamma Chapter Established 1896 36 Members				116
Pi Upsilon Rho (Ustian)					Prima Chapter Established 1878 9 Members		9
Total Fraternity Membership in College	278	249	373	118	32	41	1091
Total Students in College	383	402	466	224	136	175	1786
Percentage of Fraternity Students	72.6%	61.9%	80%	52.6%	23.5%	23.4%	61%

Seven fraternities with a total membership of 278.

Northwestern University Medical School:

1. Alpha Kappa Kappa, Xi Chapter....41 Members
2. Nu Sigma Nu.....49 Members
3. Phi Beta Pi, Theta Chapter.....44 Members
4. Phi Chi, Kappa Rho Chapter.....46 Members
5. Phi Delta Epsilon, Alpha Beta Chapter .....27 Members
6. Phi Rho Sigma, Alpha Chapter.....42 Members

Six fraternities with a total membership of 249.

Rush Medical College, University of Chicago:

1. Alpha Epsilon Iota, Beta Chapter...34 Members
2. Alpha Kappa Kappa, Nu Chapter....45 Members
3. Nu Sigma Nu, Kappa Chapter.....75 Members
4. Nu Sigma Phi, Beta Chapter.....17 Members

5. Phi Beta Pi, Delta Chapter.....38 Members
6. Phi Chi, Rho Chapter.....79 Members
7. Phi Delta Epsilon, Alpha Gamma Chapter .....40 Members
8. Phi Lambda Kappa, Gamma Chapter 9 Members
9. Phi Rho Sigma, Gamma Chapter....36 Members

Nine fraternities with a total membership of 373.

Loyola University, School of Medicine:

1. Nu Sigma Phi, Epsilon Chapter.....10 Members
2. Phi Beta Pi, Alpha Omega Chapter..44 Members
3. Phi Chi, Phi Sigma Chapter.....40 Members
4. Phi Lambda Kappa, Gamma Chapter.24 Members

Four fraternities with a total membership of 118.

General Medical College of the *General Medical Foundation* (*Formerly Hahnemann Medical College*):

1. Phi Alpha Gamma, Eta Lambda Chapter .....23 Members
2. Pi Upsilon Rho, Prima Chapter..... 9 Members

Two fraternities with a total membership of 32.

Chicago Medical School:

1. Alpha Phi Mu, Alpha Chapter.....41 Members

One fraternity with a membership of 41.

A study of these fraternities and their chapters affords some interesting statistical information. The University of Illinois with 383 medical students during the last college year had 278, or 72.5 per cent., members of medical fraternities. The Northwestern University had 402 medical students of whom 249, or 62 per cent., were members of medical fraternities. The Chicago University had 466 medical students of whom 373, or 80 per cent. were medical fraternity men. Loyola University with a medical student roll of 224 had 118, or 53 per cent. members of medical fraternities. The old Hahnemann College with 136 students had 32, or 24 per cent. medical fraternity members; and the Chicago Medical School, with 175 students, had 41, or 24 per cent. members of medical fraternities. Of the total medical students in Chicago, 1,786, during the last year, 1,091, or 61 per cent., were members of the medical fraternities. This indicates an undoubted predilection of the medical students of Chicago of the present time for medical fraternalism. It is interesting to note in this connection that non-medical Greek letter fraternities are also well represented among these medical fraternity men, including the Alpha Omega Alpha, Phi Beta Kappa, and Sigma Xi Fraternities.

The strongest medical fraternity in Chicago at present, from a numerical standpoint, is the Phi Chi with a membership of 204. This is closely followed by Phi Beta Pi with 172 members, Nu Sigma Nu with 164 members, Alpha Kappa Kappa with 132 members, Phi Rho Sigma with 116 members, and Phi Delta Epsilon, the Jewish Fraternity, with 110 members. The other fraternities in the order of their numerical strength are Phi Lambda Kappa, 59 members; Alpha Phi Mu, 41 members; Alpha Epsilon Iota, 34 members; Nu Sigma Phi, 27 members; Phi Alpha Gamma, 23 members; and Pi Upsilon Rho, 9 members.

MEDICAL MEN WHO HAVE ATTAINED FAME IN OTHER FIELDS OF ENDEAVOR

W. Moore Thompson, A. B., M. D.
CHICAGO

Continued from page 148.

Other modern medical fictionists include the late Max Nordau, the famous European novelist and head of the Zionist Movement, which is trying to have Palestine, the homeland of the Jews, restored to them. Nordau was classed among the three greatest contemporary authors. Every reader of modern fiction will recognize the name of Henry C. Rowland, as the author of splendid stories of adventure, but probably not one in a thousand knows that Rowland is a doctor. Rowland was Surgeon-general on the U. S. Army Hospital-ship "Relief," and he has seen shore duty on Luzon and among the southern islands of the Philippines. He had practiced for a time in New York city; but the success of his stories was so great that he relinquished his practice for literature. John Chalmers, not to confused with the great divine Dr. Thomas Chalmers, also deserves to be mentioned as a very graceful writer of romatic stories. Some years ago, Sir Henry Thompson, M. D. produced a strange little volume, "Charley Kingston's Aunt," which enjoyed the season's success; while Dr. W. Somerset Maugham, also an English physician, is the author of "The Circle," acclaimed by critics the greatest drama of the year, in which John Drew and Mrs. Leslie Carter jointly starred to crowded houses. Dr. Maugham is the author of "The Moon and Sixpence," the book

which two years ago took two continents by storm. His wife is the daughter of a physician and he himself studied medicine at St. Thomas Hospital, London, and at the Heidelberg University. Dr. Joseph Hergesheimer is another physician who has attained fame and fortune; and the moving picture plays, "Cytherea" and "The Bright Shawl," are two of his best known works. Finally Dr. A. S. M. Hutchinson, of England, is the author of "If Winter Comes," the greatest selling work produced this season by any writer in the world, and other popular stories; and Georges Duhamel, doctor of medicine and army surgeon in France, has recently won the famous Goncourt prize in literature, and is today "a writer with a world audience."

2. THE DOCTOR IN SCIENCE AND THE ARTS

It is a long stretch from Galen to the present day, yet we must go back to that early Greek physician to include in our study one who has ever been counted among the first and most famous of his profession who have composed literary works. He was so voluminous a writer on philosophical subjects that scores of books on logic and ethics have been fathered upon him without much question as to his authorship thereof. He is credited with eighty-three treatises, the genuineness of which is not disputed; and, excluding the spurious works, there yet remain a further fifteen fragments and fifteen commentaries on Hippocrates which may be accepted as his in part or whole. He made himself master of the medical, physiological and scientific knowledge of his time, and left a record of this period (130-201 A.D.) of inestimable value. In addition to preparing this massive work, "he found time to devote himself to various branches of philosophy with such success that later writers were well pleased to trade with the talisman of his name." And all this in addition to being famous in his medical practice at Rome, where he was physician to Marcus Aurelius, the scholarly Roman Emperor. Next to Hippocrates, he was the greatest of clinical observers.

Then, we must not forget Girolamo Fracastoro (Fracastorius), the man to whom we owe the word "syphilis," and who died just after the middle of the sixteenth century. "Far from being a specialist he was one of the all round men of human history. He was a physician, a geologist, a physicist, an astronomer, a pathologist, and a poet. He was the first scientist to refer to the magnetic poles of the earth, in 1543. He shared with Leonardo da Vinci the honor of being the first to "appreciate the real significance of fossils." He used the word "syphilis" in a poem with the title "Syphilis sive Morbus Gallicus," which was published at Venice in 1530. His greatest merit consists in the discovery of the theory of infection by microörganisms in so-called infectious diseases.

How many here know that Leonardo da Vinci, the greatest of all painters, was, as William Hunter states, "the greatest anatomist of his epoch?" Anatomy, largely through the great artists of that period—notably Michel Angelo, Raphael and Leonardo da Vinci—was chiefly developed in Italy. In recent years many hundreds of the sketches, cartoons and chalk drawings of these artists have been discovered, and Leonardo did his work so well that his sketches have been considered a treasure. Garrison, in his "History of Medicine," says of them: "Startlingly modern in their accuracy and display of physiologic knowledge, these impromptu sketches, made beside the dissected subject, reveal such acquaintance with muscular anatomy as was possible only to the Greek sculptors. Leonardo taught painters and sculptors that a scientific knowledge of artistic anatomy can be gained only at the dissecting-table. He made over 750 separate sketches, including not only delineations of muscles, but drawings of the heart, the lungs, the cervical, thoracic, abdominal and femoral blood-vessels, the bones and nerves, with deep dissections of the viscera and cross-sections of the brain in different planes."

Among these men should also be included one, "Giles Firman," whom Oliver Wendell Holmes mentions in his "Medical Essays" as having practiced medicine in this country, but who, not succeeding, wrote to Governor Winthrop: "I am strongly sett upon to study divinitie; my studyes else must be lost, for physick is but a meene helpe." His lectures in anatomy were the first scientific teaching in the new world; and it is to be hoped he found the new profession more lucrative and successful than medicine had proved to be.

Sir John Hill, an eighteenth century physicion, was a fairly extensive litterateur, and in addition to producing treatises on botany, medicine, natural history, and philosophy, wrote half

a dozen novels and several dramas. His *chef d'oeuvre* was "The Vegetable System," a work of such magnitude that it ran to twenty-six volumes, a copy of which was presented to the King of Sweden and procured for the author the distinction of being included in the Order of the Polar Star.

As Egdahl has said: "Linnaeus exists in the minds of most people as a great botanist—as the man who introduced system in the classification of plants." His work in zoölogy is fairly well known, but his contributions to medicine are but little known, especially by the medical profession. He was a graduate of the Medical College of Hardeswick, Holland. Subsequently he was appointed physician to the fleet at Stockholm, and, later, botanist to the King. In 1741, he was appointed to the professorship of physic and anatomy at Upsala, and a year later became professor of botany. In addition to his botanical work his name is entitled to a lasting place in the history of medicine.

It must not be forgotten that Henle, the famous German pathologist and anatomist, was also a practicing physician for some time; and only recently, late in 1921, John Beattie Crozier, English physician and distinguished philosopher, historian and political economist, died in London at the age of 71 years. "His reputation was made outside his profession, and his name is unknown to the great majority of its members, for few of them take interest in the highly intellectual work to which he devoted his life and for which he sacrificed himself. Though from a border family among the little Scottish colony of Galt, Canada, and educated at Toronto University, he developed his life as a doctor and philosopher in London." His "History of Intellectual Development" had an excellent reception from the first, and eventually he received the public appreciation of distinguished contemporaries, including Lord Bryce, Sir William Osler, Frederic Harrison, and others, for "his eminent services to British scholarship and speculation, and his unselfish endeavors for human welfare."

I do not feel that this section of my paper would be complete without mention of my very dear friend and fellow member of the Grosis society, Dr. W. A. Newman Dorland, who not only has made a very valuable contribution to scientific literature in his popular "American Illustrated Medical Dictionary," but who has written several books of general interest which should give his name a permanent place among the medico-literatti of our generation. His best known works of the latter class are "The Sum of Feminine Achievement," "The Age of Mental Virility," and his satire on snobbery, "What Billingsgate Thought."

3. THE DOCTOR IN POLITICS AND STATESMANSHIP

If the profession of letters has been the favorite exchange made by physicians who desired to branch out in their lifework, politics has ranked a close second. That storehouse of knowledge and interesting information, the "Medical Essays" of Oliver Wendell Holmes, enlightens us greatly in this matter. Among other facts, long since forgotten, he states that Roger Williams is said to have saved many lives in a kind of pestilence which swept away many Indians. Who would ever have associated the ascetic Roger Williams with the practice of physick! Holmes also notes that the two Winthrops, John Sr., second Governor of Massachusetts Bay, and his son, John Jr., Governor of Connecticut, both sustained a certain relation to the healing art. The elder Winthrop is said by John Cotton to have been "help for our bodies by Physick (and) for our Estate by Law;" while his son, the Governor of Connecticut, was as much physician as magistrate and governor. He practiced so extensively that but for his more distinguished title in the State he would have been remembered as the "doctor." The records of his medical experience have, fortunately, been preserved, and they give us a fair idea of the way patients were treated in New England in the latter part of the seventeenth century when they fell into educated hands.

Of a later period mention must be made of Joseph Warren, who lived, when King George the Third was ruler of the thirteen American colonies, on a hill in Roxbury, Massachusetts, midway between the village of Dorchester and the town of Boston. He became a busy and popular doctor; but eventually he went into politics and became so patriotic that a rabid Tory wrote concerning him: "One of our most bawling demagogues and voluminous writers is a crazy doctor." It was Dr. Warren who did more than any other person, with the exception of Samuel Adams, to arouse the spirit of liberty in Massachusetts. He

it was who sent Paul Revere upon that world-famous ride through Arlington, Concord, and Lexington. As a soldier, Dr. Warren was as energetic and enthusiastic as in his practice of medicine, and although he continued his practice when the times became strenuous and the hired soldiers of King George threatened Massachusetts, he prepared to fight. When the news of the battle of Lexington reached him he left all and rode to the scene of action. Later, when the battle of Bunker Hill was fought, Dr. Warren had become a major general, and perished in that fight by means of a musketball.

One of his contemporaries, Benjamin Rush, the most conspicuous of American physicians of the Revolutionary period, was termed the "intellectual offspring of the movement which produced the Revolution." "The same hand," says one of his biographers, "which subscribed the declaration of the political independence of these States, accomplished their emancipation from medical systems formed in foreign countries, and wholly unsuitable to the state of diseases in America." I must also mention here Dr. Michael Lieb, a soldier of the Revolution, and surgeon of one of the Associator Battalions of Philadelphia. He subsequently became one of the founders of the famous College of Physicians of Philadelphia, and after a notable career in medicine, entered politics, became known as the "czar of Philadelphia County," then became a brigadier general and finally United States senator from Pennsylvania.

To this same generation belongs Dr. Jean Paul Marat, who acquired his medical degree at Bordeaux, and practiced for some time in London, where he wrote his "Philosophical Essay on Man" and certain medical treatises. His fame as a clever doctor was great in 1775, and Charles Xth made him brevet doctor to his Guards. When the French Revolution broke out in all its wild fury, Marat identified himself with the leaders of the movement, became one of its controlling influences, and met his death at the hands of Charlotte Corday. The reputation for cruelty and prejudice which he left behind him was unenviable, to say the least. Associated with his name will always be remembered that of Dr. Guillotine, irrevocably attached to the formidable machine which contributed so dreadfully to the terrors of the Revolution and which still remains the national method of capital punishment in France. It is a curious reflection on the medical profession that the two machines which have done so much toward the destruction of human life should have been devised by men who, hypothetically at least, had signed the Hippocratic oath to conserve life. Dr. Richard J. Gatling, of this country, invented the instrument of warfare known by his name, which has probably destroyed more lives than any single doctor could ever hope to save by personal ministrations. On the other hand stands Dr. Alexander Graham Bell, the inventor of the telephone, which has done more to preserve life and improve our civilization than any other improvement or discovery of the last century.

A little later in our national development, a graduate of the University of Pennsylvania in 1843, Dr. William Walker, attained to a position never before nor since held by an American citizen. This man of a roving, adventurous disposition, became a filibuster in tropical America and, through some strange freak of fortune, reached the presidency of Niacaragua, only to face eventually the firing squad, which thus, untimely, ended his career as a soldier of fortune. Later still, up in the "Granite State," a young man, Jacob Gallinger, studied medicine and became a country practitioner before the Civil War. After the war his fellow citizens sent him to the State Legislature. Politics interested him so much that he ceased his practice, preferring to make medical laws instead of pills, as was the general custom in those days. He subsequently became Surgeon General of the State, Chairman of the State Committee, Representative to Congress and United States Senator.

It is a far cry from the doctor's office to the Pope's chair and it requires quite a vivid imagination to even consider it among the possibilities; and yet it is a matter of very interesting history that Pope John XXI (Petrus Hispanus) was a celebrated Portuguese physician. He was author of several medical works, notably the curious "Liber de Oculo," and also of a popular text-book on Logic, "De Summulæ Logicales." His pontificate extended from Sept. 8, 1276, to May 20, 1277, when he was killed by a collapsing roof in his palace. During his brief reign he excommunicated Alphonso III, of Portugal, for interfering with Episcopal elections; and established diplomatic relations with the Great Khan.

At the present time no mean number of medi-

cal men are holding positions of honor and trust in the world of politics and statesmanship. Physicians figure quite extensively in the republican Senate of France as also in the royal Senate of Italy. In the Central and South American republics the medical profession has been the common stepping-stone to political honor and preferment and, not infrequently, to the presidency of a number of those states. Lord Lister, the father of asepsis and antisepsis, was associated for some time, as a member of King George's privy council, with the famous doctor, the Right Honorable Sir Leander Starr Jameson, the physician, friend and most intimate associate of Cecil Rhodes. Dr. Jameson was the leader of the historic and fateful Jameson raid into the Transvaal, and subsequently became prime minister of South Africa.

Not to mention Dr. E. E. Taylor, who in addition to writing many beautiful poems, made a name for himself as reform mayor of San Francisco; Dr. Sun Yat Sen, who was chosen President of South China and may yet consolidate the entire Celestial Empire under his wise rule; and Dr. Hubert Work, graduate of the University of Pennsylvania and Postmaster General and Secretary of the Interior in the Cabinet of President Harding; we must not fail to note Dr. Charles (now Sir Charles) Tupper, who for many years in the little town of Amherst, Nova Scotia, assisted in ushering numerous sturdy "Blue-noses" into the world. Everyone liked him, and many a Nova Scotian boasts today that Sir Charles Tupper, ex-Premier of Canada, officiated at his birth. Because of this general affection for him, Dr. Tupper was sent by the citizens of Cumberland County to the local assembly. Once in politics he steadily rose until he reached the post of Premier. He also held the offices of High Commissioner for Canada in England, President of the Privy Council of Canada, Minister of Finance, Minister of Railways and Canals, and later, leader of the opposition in the House of Commons.

Sir Thomas Crosby, a man of great professional eminence and extreme culture, was the first doctor to become, recently, the chief of Guildhall, Lord Mayor of London, since the institution of that office over 700 years ago. The recent election of Dr. Royal S. Copeland as United States Senator for the "Empire State" marks an important advance made by medicine in the legislative life of this nation. Dr. Copeland is the second physician to be elected to the present upper house of Congress, Dr. Joseph I. France, for the last six years United States Senator from Maryland, being his predecessor in that body. Dr. Copeland served efficiently as mayor of Ann Arbor, Michigan; and then, as Commissioner of Health of New York City, made a distinguished record for himself. All of my hearers know that England's present Ambassador to the United States is Sir Auckland Geddes, but I doubt if many know that he is a doctor and a distinguished professor of anatomy in his alma mater.

Among the medical statesmen of today two names loom high above all others. Leonard Wood, a native of New Hampshire, graduated in medicine from Harvard University and was a practicing physician in private life before he entered the army. His career has been marked by brilliant success, and he has served most capably as Major General in the U. S. army, Military Governor of Cuba, and Governor General of the Philippines. His candidacy for the presidency of the United States is of recent knowledge, and two years ago he tentatively accepted the office of Provost of the University of Pennsylvania, which he has but this last month resigned, preferring to remain Governor General of the Philippines.

Georges Clemenceau, the "Tiger of France," has all his life been a staunch and fearless fighter for what he believed to be the best interests of France. Before he was twenty he was thrown into prison for shouting "Vive la Republique!" on the streets of Paris in the midst of the celebration of one of the imperial anniversaries. Subsequently he practiced medicine in New York city, and became a specialist in skin diseases in Paris after some years. When he assumed the premiership of France he suspended his regular practice at his private residence in the Rue Franklin, and merely continued to give medical advice and treatment to those of his patients who were too poor to pay. He became the most masterful and adroit Prime Minister in the history of the present French republic. As doctor, author, editor, politician, statesman, he never wavered. In addition, he is also an able art critic, a lover of music, and a naturalist.

Royal Doctors. The medical profession and royalty would, to the average person, seem to be as remotely separated as any two stations in life

could be; yet even among the royalty of Europe has the doctor found his way, leaving an enviable record there—as is his usual wont.

The late Duke Charles Theodore, of Bavaria, was celebrated far and wide as an oculist, and had to his credit at the time of his death nearly 6,000 successful cataract operations, performed almost entirely among the poor. His daughter, the present Queen of Belgium, was for some years prior to her marriage to Albert, the trained assistant of her father; and today she is fully qualified to take up practice as an oculist. Ex-Queen Marie Amelia, of Portugal, secured, by dint of exhaustive study and by passing all the necessary examinations, a diploma as doctor of medicine. Her object in doing this was to enable her to exercise a more careful supervision and control over the hospitals and homes for the dying which she had founded and endowed at Lisbon. The recent Queen of Bulgaria has a medical degree, and, as a doctor, was able to assume active command of one of the most useful of ambulance trains that ever left St. Petersburg for the front during the war in Manchuria—a train which was instrumental in saving the lives of thousands of sick and wounded. Finally, Prince Louis Ferdinand, of Bavaria, who did such good work as President of the Imperial Cancer Research Society of Germany, was the leading gynecologist and obstetrician of Bavaria, in 1911; and, likewise held the rank of Surgeon-General in the armies of Germany and Spain, of which latter kingdom the young monarch was his nephew.

4. THE DOCTOR IN OTHER ACTIVITIES

The boldness of character and strength of will which are essential traits of most of the higher grade medical men, have served them well in times of emergency and have made of some of them successful men of adventure. It is interesting to note that Charcot, the Frenchman who explored the Antarctic regions, was a doctor; as was also Hays, who, with Dr. Elisha Kent Kane, a graduate of the University of Virginia, braved the terrors of the Arctic snow and ice in search of the lamented Sir John Franklin. It was a doctor, too, David Livingstone by name, who became the famous African explorer. He was a graduate of the Faculty of Physicians and Surgeons of Glasgow and he exemplified in his noted career the motto of his life: "Fear God, and work hard." Also, we should mention under this heading that lion-hearted medical missionary to Labrador, explorer and prolific author, Wilfred Thomason Grenfell, than whom there lives no more worthy representative of our profession in other fields.

Finally, it has become proverbial to speak of doctors, as a class, as poor business men; and this accusation is almost always made as if it were a cause for reproach, or as if it indicated a defect of character. Rather should it be looked upon—if it exist at all, which I seriously doubt—as a trait of their supreme spirit of self-sacrifice and devotion to work of a humanitarian nature. It surely must stand to reason that not every man of so large a profession, numerically speaking, is inherently defective in the business sense. Rather, is it his ethical aversion to commercialism and his tendency to yield to a sympathetic outlook upon life which has often resulted in great, and even serious loss to himself and his family in many instances.

But when he concentrates his energies, as he occasionally does, upon the cultivation of the money-making brain-centers, no finer class of business man exists. When we recall such financial lights as W. Seward Webb, who practiced medicine in New York and later became the powerful financier, president of five railroads and two navigation companies, and a director in more than forty corporations; or Norvin Green, Vice-President of the American and Western Union Telegraph Companies, who was a practicing physician in Kentucky, we must admit the truth of this assertion. Moreover, Karl F. A. Von Welsbach, the man who invented the Welsbach light and the osmium lamp, was a doctor; as was Rufus H. Gilbert, the man who invented the elevated railroad and was at the head of the company that built the first road of that kind in New York; as a surgeon in the Duryea Zouaves he performed the first amputation under fire during the Civil War. Others of equal note could be mentioned here, but we will let these striking instances of great business ability in medical men answer for the many others who are no less noted in their respective stations.

And now, what more need I add? If I have at times painted the doctor in somewhat glowing colors, please be kind enough to remember that it is difficult to write an essay of this nature without allowing an added touch of coloring to occa-

sionally enter into the picture. My pride in the profession would stimulate my desire to bring out the best that the profession produced and to leave the worst to your own imagination. This is my only excuse. The remarkable group of medical men of fame in fields aside from their professional studies which I have collated will speak for itself. These men, I claim, were no less efficient as doctors because they had cultivated other of their brain-cells, than was Franklin the philosopher and scientist belittled by Franklin the statesman. Rather, as Weir Mitchell has remarked, is the doctor improved as a doctor by growing great in other lines as a means of mental diversion. And to them, as to all mankind, comes the injunction: *"Whatsoever* thy hands find to do, do it with thy might."

25 E. Washington Street.

A WHOLE CASE OF IT

"Hello! Mr. Brown says he can't come to the banquet tonight; he has a case of laryngitis."

"Oh, tell him to send it over and come along. We'll drink anything."—San Francisco Chronicle.

Society Proceedings

GREENE COUNTY.

The Greene County Medical Society met in Whitehall, Sept. 14, 1923, at the City Hall, and was called to order at 11:30 a. m. by Wm. D. McTunison. Letters were read by the secretary from Olive West, secretary of the A. M. A., in reference to resolution on the liquor question, and one from Dr. Edw. H. Ochsner, president of the State Medical Society.

Drs. A. R. Jarman of Whitehall and Nathaniel J. Bucklin of Roadhouse were elected to membership in the society. After an excellent dinner at Hotel Stocks, provided by the doctors of Whitehall, the society reassembled at the City Hall and was called to order at 1:30 p. m. Dr. H. P. Beirne, councilor, of Quincy, delivered an address on the "Economic Side of the Practice of Medicine." This was a masterly address and was enjoyed by all present. Discussion followed by all. A motion prevailed that we as a society take part in the Baby Conference at our county fair for this year. An amendment to this motion prevailed, that our society do not approve of the policy of the state rendering free service except in communicable diseases.

The censors reported on Roadhouse for our next meeting. A very interesting, live meeting—one of our best.

Adjourned.

Thirteen members and three visitors were present.

W. KNOX, *Sec.*

Marriages

ALEXANDER HERBERT BARNETT to Miss Margaret Gertrude Severs, both of Chicago, August 22.

JOSEPH EDWARD LEO to Miss Lucille J. McGuinn, both of Chicago, September 1.

JULIUS G. LEVY to Miss Elizabeth Lashensky, both of Chicago, August 2.

ALEXIS T. TELFORD to Miss Ida E. Markman, both of Olney, Ill., June 30.

HARRY E. MIDDLETON to Miss Florence Rose, both of Alton, Ill., July 10.

Personals

Dr. Harry C. Campbell has been appointed city physician of Alton.

Dr. Frank L. Alloway, Champaign, has been appointed attendant specialist in eye, ear, nose and throat to the U. S. Veterans' Bureau, Champaign, to succeed Dr. Ralph W. Hulett who resigned on account of ill health.

The physicians of the Brokaw Hospital staff gave a dinner at the Bloomington Country Club in honor of Dr. Perry L. Noggle, who will move to Florida, and to Dr. Joseph Norman Elliott, who goes to the Ford Hospital, Detroit.

At the annual convention of the International Association of the Deaf, August 15-17, Arthur I. Roberts, Chicago, was elected president.

Dr. Isaac D. Rawlings, the state commissioner of health, has appointed the following physicians as district health superintendents: Christian H. Diehl, Effingham; A. J. Markley, Belvidere; Paul A. Slater, Hindsboro; Robert C. Bradley, Peoria; Charles S. Nelson, Springfield, and Henry Reis, Jr., Belleville.

Dr. Earl Miller has been appointed director of the Department of Experimental Medicine of Parke, Davis & Co., Detroit, to fill the vacancy following the death of Dr. Ezra Read Larned, who was the originator and organizer of this department and occupied the position as head of the department until his death. Dr. Miller was assistant to Dr. Larned for twelve years and has a wide acquaintance among medical men interested in clinical research work.

Dr. and Mrs. R. E. Miltonberger of Spring Valley have returned from a nine weeks' tour of the west.

News Notes

—The annual dinner of the Chicago Medical Society will be held, October 10.

—The Tri-City Sanatorium, Moline, of which Dr. Elmer F. Otis is superintendent, has been closed.

—Excavation work has been started for the $125,000 nurses' home for the Washington Boulevard Hospital, Chicago.

—The Illinois Soldiers' and Sailors' Home and Hospital, Quincy, has been opened to World War veterans and their wives.

—A building to accommodate 150 patients and a home for nurses will be erected at the Methodist Hospital of Central Illinois, Peoria.

—The David Prince Sanitorium, Springfield, was recently damaged by fire to the extent of $50,000. The institution will be rebuilt.

—The third annual meeting of the American Association of Oral and Plastic Surgeons will be held at the Congress Hotel, October 22-23, under the presidency of Dr. Truman W. Brophy, Chicago.

—Aurora business and professional men have assumed charge of a campaign to raise $100,000 for a building fund for St. Charles City Hospital. It is to be used for a complete maternity hospital.

—According to an estimate of the U. S. Public Health Service, people in Illinois last year spent $30,000,000 for "patent medicines." For state public health service they spent, it is said, less than $500,000.

—The North Shore Branch of the Chicago Medical Society opened the season with a dinner, lecture and dance at the Sheridan Plaza Hotel, September 8. Following the dinner, Dr. Carl O. Schneider gave a travel talk.

—The state health department is investigating an epidemic of typhoid fever at Peoria, in cooperation with the local authorities. Physicians have reported sixteen cases. It is thought that contaminated milk is responsible for the outbreak.

—A special meeting of the council of the Chicago Medical Society was held, August 17, to discuss the venereal disease problem of Chicago. Drs. Charles M. McKenna, John S. Nagel, Malcolm L. Harris, Austin A. Hayden and Robert H. Herbst were appointed members of a committee to devise a plan for the consideration of the council at the meeting in October.

—The State Fair better babies conference, which opened September 15, had an entry registration of 1,455. This is more than 100 greater than last year, according to the state health department records. A staff of thirty physicians and dentists, twenty-five nurses and about fifty clerks and attendants was employed during the conference. Since its establishment eight years ago, the baby conference has grown from a registration of 250, and the conference movement has spread over the state. At practically every county fair of importance and at cities many better baby conferences are held on their own merits.

—At the official Illinois state educational exhibit in Exposition Park, Aurora, free medical examinations are made and advice given under the direction of the department of public health by Dr. A. J. Markley, Belvidere, and a staff of Aurora physicians. The department of public welfare is exhibiting a collection of work contributed by the men and women in the state institutions for the blind and insane. In connection with the department of social hygiene, there is an exhibit explaining educational methods of eradicating venereal disease; in the afternoon and evening moving pictures are used to show occupational therapy in state hospitals, and the proper care of babies in summer.

—A conference was held in the office of the director of public health, September 5, to promote a physical examination campaign in line with the National Health Council movement. Sixteen different organizations, including three of the state departments, were represented. An organization was formed with Dr. Isaac D. Rawlings, chairman; Mr. J. W. Becker of the Illinois Tuberculosis Association, secretary, and Mr. Walter Davidson of the American Red Cross, treasurer. A meeting of the board of directors and the finance committee will take place, October 24, when it is expected that the organization will be completed and plans outlined. The national movement has been limited to one year, but it is the purpose in Illinois to establish a permanent institution with the object of stimulating annual physical examinations as a routine matter.

—The Elizabeth McCormick Memorial foundation has offered to install health instruction and supervision in three Chicago schools. In the three schools it is planned to give children

intensive training in health methods, including dieting, proper exercise, correct care of their bodies, and personal hygiene. The children will be subjected to health and mental tests before the plan is put into operation, and at the end of a two year period they will again be examined to discover whether they have benefited.

The schools have not been decided upon, but it is planned to have each one in a different locality. Three other schools in the same neighborhoods will be observed and the results contrasted.

—Ten Elgin physicians have incorporated the Elgin Radium Association and purchased a supply of radium for the use of physicians in Elgin and vicinity.

—A large addition and a new nurses' home is planned for the Methodist Hospital, Peoria.

—The Illinois State Association of Graduate Nurses, Chicago, will erect a cottage for tuberculous patients at the Naperville (Ill.) Sanatorium.

—Nearly 1,500 babies were registered at the State Fair Babies' Conference, it was announced by the state health department, September 8.

—At a meeting of the school board of East St. Louis, September 11, $5,000 was appropriated to the health supervising committee for attention to the school children of the city this year.

—The Vermillion County Medical Society went on record as opposing the establishment of a venereal disease clinic in Danville, at a meeting, September 4.

—It is planned to close the Detention Hospital, Mill Street, Rock Island, and to have St. Anthony's Hospital take care of patients having contagious disease.

—The board of trustees of the University of Chicago have recommended the establishment of a memorial at the university to the late Dean Rolin D. Salisbury.

—The Evangelical Deaconess Hospital will soon start a campaign for $500,000 for a 150-bed hospital, research laboratory and dispensary on the north side. The hospital will be nonsectarian.

—The superintendent of the Spalding School, Chicago, which takes care of 400 crippled children, announced, September 18, that tuberculosis of the bone has greatly decreased in the school since 1918. Whereas five years ago 33 per cent. of the pupils in the school had bone tuberculosis, now only 18 per cent. are so affected.

—The Moline physicians' exchange since its organization two years ago has located 6,000 physicians for clients who needed their services. It is not only invaluable for local residents but fills the need of tourists and others who are not acquainted with the local physicians.

Deaths

Isaac Friedman, Chicago; Bennett Medical College; Chicago, 1895; member of the Illinois State Medical Society; aged 65; died, August 20.

James Ferlando Graham, Chicago; Medical Department of the University of the City of New York; member of the Illinois State Medical Society; Civil War veteran; aged 75; died, September 14, of arteriosclerosis and interstitial nephritis.

Seth Scott Bishop, Evanston, Ill.; Chicago Medical College, 1876; died suddenly, September 6, of heart disease; Dr. Bishop was formerly professor of otology, rhinology and laryngology at Loyola University School of Medicine, and the Post-Graduate Medical School, Chicago, and on the staffs of the Illinois Charitable Eye and Ear Infirmary, the Post-Graduate Hospital and Medical School, the Mary Thompson and Jefferson Park Hospitals, Chicago, the Silver Cross Hospital, Joliet, and the Illinois Masonic Orphans' Home, La Grange. He was author of "Diseases of the Nose, Throat and Ear" and "The Ear and Its Diseases."

Frederick W. Kohlhamer, Chicago; Missouri Medical College, St. Louis, 1890; aged 56; died, August 31, at La Mesa, Calif.

William Russell McIntyre, Troy Grove, Ill.; University of Illinois College of Medicine, Chicago, 1909; aged 45; died, August 12.

Charles Frederick Millspaugh, Chicago, died, September 15, at the Presbyterian Hospital, of pneumonia! Born at Ithaca, N. Y., June 20, 1854, Dr. Millspaugh graduated from the New York Homeopathic Medical College, New York, 1881, and practiced medicine in his native state for ten years. He was botanist at the University of West Virginia from 1891 to 1893, and curator of the department of botany at the Field Museum of Natural History, Chicago, from 1894 until the time of his death. He was professorial lecturer in economic botany, University of Chicago, since 1895. Mr. Millspaugh explored in Mexico, Brazil, the West Indies and the Bahama Islands. He was author of "American Medical Plants" and many other works.

Charles Wesley Turner, Harrisburg, Ill.; St. Louis College of Physicans and Surgeons, 1898; a Fellow, A. M. A.; formerly mayor of the city; aged 52; died suddenly, August 19, of heart disease.

John Eddy Haskell, Chicago; College of Physicians and Surgeons, Chicago, 1903; formerly instructor in materia medica at the University of Illinois College of Medicine; aged 48; died, September 16, of cerebral hemorrhage.